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UNITED STATES DEPARTMENT OF AGRICULTURE
BULLETIN No. 696
Contribution from the Bureau of Crop Estimates
LEON M. ESTABROOK, Chief

Washington, D. C. ▼ September 26, 1918

GEOGRAPHICAL PHASES OF FARM PRICES: CORN

By

L. B. ZAPOLEON, Formerly of the Division of Crop Records

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SCOPE OF SUBJECT OUTLINED.

Yields to the acre are a measure of physical limitations, and producers' prices reflect commercial factors.

Analysis of extreme sectional differences in prices paid to farmers discloses zones of uniformly high or low prices, between which prices graduate. This price advantage or disadvantage varies with each product.

The geography of farm prices constitutes a controlling element in local types of agriculture.

In the foreground of the present-day problems are those having to do with the prices of food products. The importance of geographic factors in producers' and consumers' prices is not apparent in the middle ground represented by average prices and price levels, for great differences usually prevail in the prices of a specific product in various sections of the country. The trend of this local variation differs for each commodity. The lowest wheat prices,

for instance, occur in areas wherein relatively high prices prevail for corn. In the South lower production, higher prices, and smaller consumption of wheat and other cereals go hand in hand.

Such price differences are not accidental; they are traceable to fundamental conditions which in many instances are contrary to the general tendencies. Particularly is this true in the producers' price, or "farm price," which is the basic as well as the first and lowest price of food products.

The present investigation is confined chiefly to the influence of producing areas, trade routes, and consuming centers upon prices paid to farmers for corn and to a survey of the regional differences in such prices.

Existing types of agriculture are determined by a combination of physical and commercial factors. Physical limitations upon most agricultural products may be said to be measured by the average yield in bushels to the acre. High or low yields per acre decrease or increase costs of production. It is also apparent that commercial limitations on production are to a large degree reflected in the price obtained by the farmer.

When the varying farm prices of a product are properly charted on a map they are seen to increase or decrease in determinate directions. The regions of lowest and of highest prices are thus shown clearly, also regions or zones of intermediate prices. The directions of the price movement vary with each product. Small areas appear where farm prices are higher or lower than in the surrounding territory or zone.

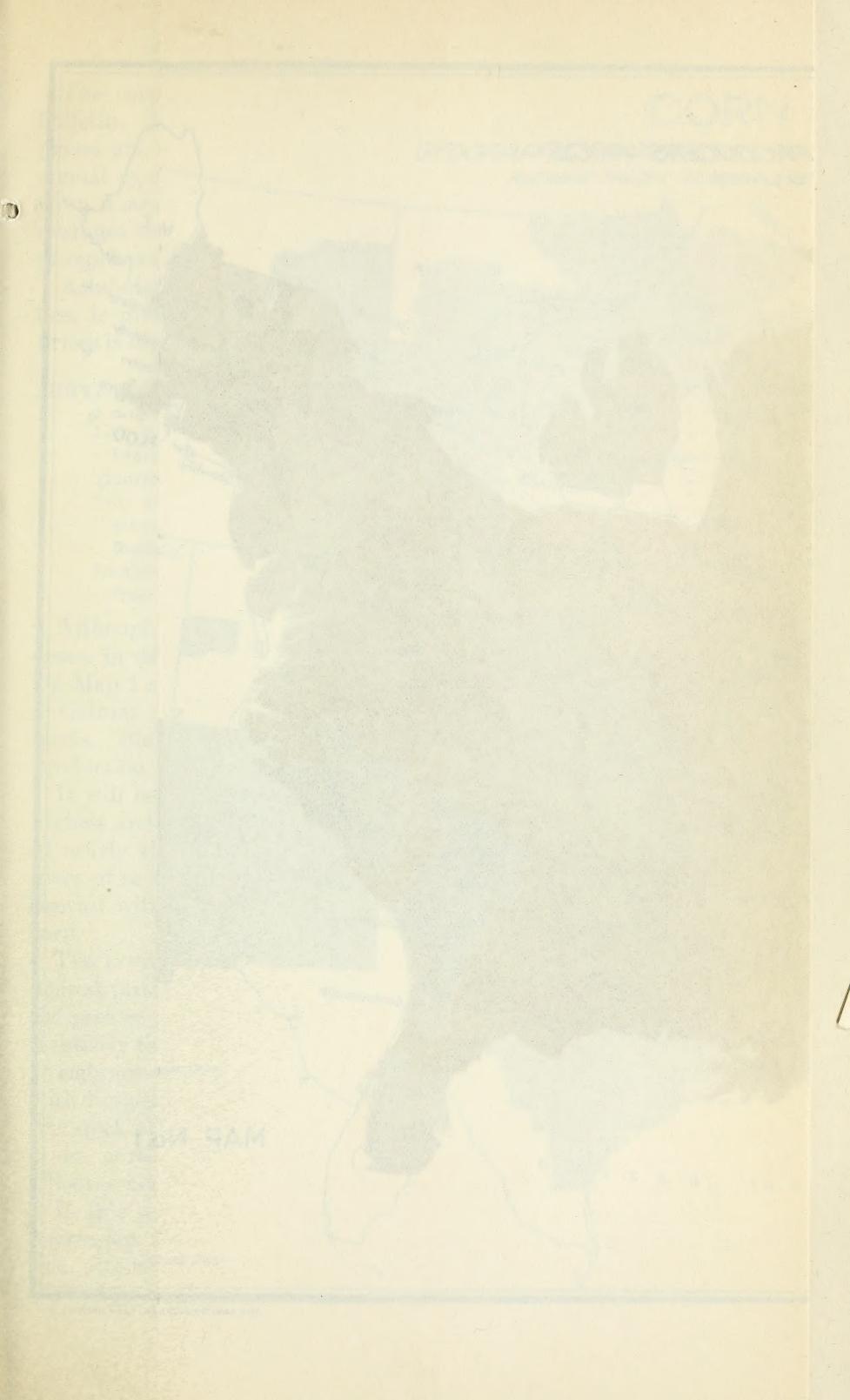
The "geography of farm prices" is thus a controlling element in crop selection. Climate and soil are, of course, the dominating physical factors which determine local types of agriculture. But the local farm price is an index of commercial conditions that are hardly less important. Given a sufficiently high price, obviously products could be grown profitably under unfavorable physical conditions.

DATA EMPLOYED AND METHOD OF TREATMENT.

"Isotimes," the term used for lines bounding areas of like price.
Counties as basis of measurement, and a five-year average employed to distinguish normal from spasmodic price differences.

To the lines delimiting areas of like price the term "isotimes" (price lines) has been given,[1] similar to "isotherms" and "isobars" as applied to lines running through points of like temperature or barometric pressure. Just as the course of climatic changes is outlined in the latter two so are local or general commercial disturbances reflected in the isotimes.

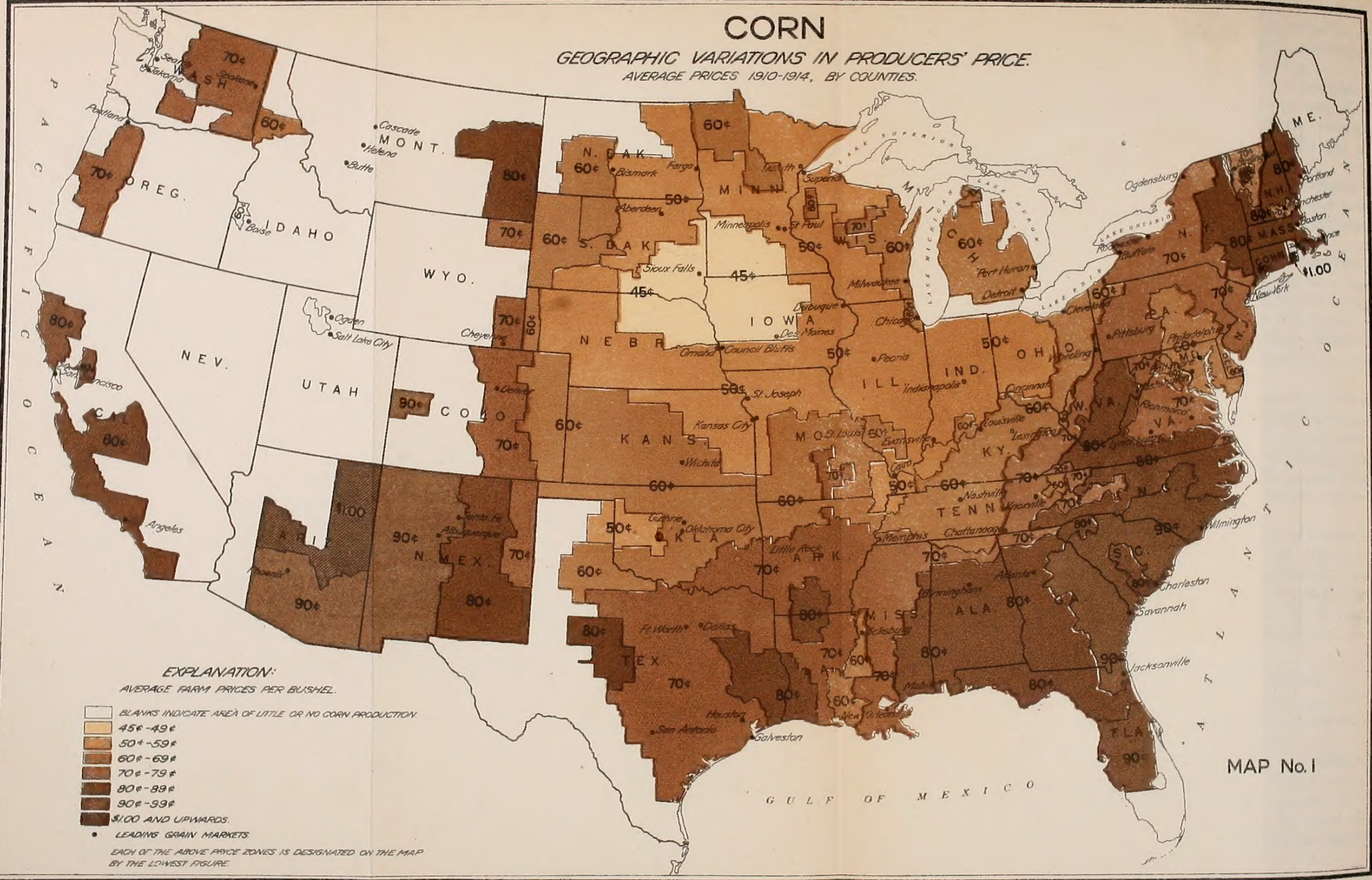
[1] Th. H. Engelbrecht.



CORN

GEOGRAPHIC VARIATIONS IN PRODUCERS' PRICE.

AVERAGE PRICES 1910-1914, BY COUNTIES.



EXPLANATION:

AVERAGE FARM PRICES PER BUSHEL.

BLANKS INDICATE AREA OF LITTLE OR NO CORN PRODUCTION.

- 45¢-49¢
- 50¢-59¢
- 60¢-69¢
- 70¢-79¢
- 80¢-89¢
- 90¢-99¢
- $1.00 AND UPWARDS.
- • LEADING GRAIN MARKETS.

EACH OF THE ABOVE PRICE ZONES IS DESIGNATED ON THE MAP BY THE LOWEST FIGURE.

MAP No. 1

THE NORRIS PETERS CO., WASHINGTON, D.C.

70¢
Seattle
Tacoma
WASH.
Spokane
60¢
Portland
70¢
OREG.
Butte
Portland
Boise
IDAHO
$1.00
80¢
Ogden
Salt Lake
NEV.
UTAH
80¢
San Francisco
CAL.
80¢
Los Angeles
$1.00
ARIZ.
Phoenix
90¢
PACIFIC OCEAN
EXPLANATION:
AVERAGE FARM PRICES PER BUSHEL.
BLANKS INDICATE AREA OF LITTLE OR NO CORN PRO
45¢-49¢
50¢-59¢
60¢-69¢
70¢-79¢
80¢-89¢
90¢-99¢
$1.00 AND UPWARDS.
LEADING GRAIN MARKETS.
EACH OF THE ABOVE PRICE ZONES IS DESIGNATED ON
BY THE LOWEST FIGURE.

The county has been used as the basis of measurement in this bulletin. It represents the smallest unit of area for which farm prices are to be had. The base figures were compiled from the annual reports of about 30,000 township reporters of the Bureau of Crop Estimates for December 1, 1910–1914, inclusive. Five-year averages were used instead of quotations for a single year, in order to represent more nearly normal rather than occasional conditions.

A tabular presentation of the prices of corn, by States and counties, is given in the Appendix (p. 45). Geographic variation of prices is depicted by means of maps and graphs.

SURVEY OF BROAD REGIONAL DIFFERENCES IN CORN PRICES.

Low prices prevail throughout the great corn States, from Ohio to Nebraska; the minimum price paid to producers of corn appears at the northwestern end of this section.

This area of lowest price forms a price depression; prices attain constantly higher levels toward all points of the compass, at varying degrees of increase.

Maximum prices are paid usually to growers in producing areas farthest from the corn belt—in the Southwest and Southeast.

Although the farm prices of corn will be seen to increase or decrease in definable directions, this movement is somewhat irregular. On Map 1 a 10-cent price unit has been used to overcome minor local deviations and show more clearly the general trend of the price levels. Blank spaces on this map indicate areas of little or no corn production, according to the 1910 census.

It will be observed that the difference in farm prices between the highest and lowest region exceeds 60 cents per bushel, or a variation of nearly 150 per cent. Under usual conditions the isotimes, or degrees of sectional price difference, as they are delimited on the map, prevail without regard to oscillations in the general price level of corn.

The lowest prices paid to corn growers occur within the areas of densest production—from western Ohio, across the corn belt, through the greater part of Nebraska. This zone of low prices includes substantially the heaviest producing sections of all the great corn States. It embraces the greatest agricultural region within the United States, with highest land values, highest aggregate value of all crops and live stock produced. The minimum price of 45 cents a bushel appears at its northwestern corner, within an irregular square formed by adjacent portions of Iowa, Nebraska, South Dakota, and Minnesota.

In this region of minimum farmers' price occurs the lowest price depression, away from which prices graduate upward in every direction, attaining, as a rule, steadily higher levels toward all points of the compass. The maximum prices prevail in the arid Southwest,

for the small quantities produced in the irrigated areas. Second only to those of this region are the high prices prevailing for corn in the Southeast and around the Gulf of Mexico. Very high price levels are as a rule attained near the seacoasts.

A varying degree of increase may be noted in the upward graduations, moving away from the described pivotal area of minimum price. Due eastward, throughout a large part of the corn States, bounded on the south by the Ohio River, prices are marked by comparative uniformity and rise only slightly; but when the Eastern States are reached the increases become more pronounced. Toward the West, where regions of scant production are not far distant from the pivotal area, prices ascend rapidly. Likewise the increases are more notable in all directions other than immediately eastward through the corn belt.

PRICE LEVELS AND COMMERCIAL MOVEMENT OF CORN.

Practically the entire domestic surplus, as well as nearly all the corn entering into general trade channels, originates within the area of low prices.

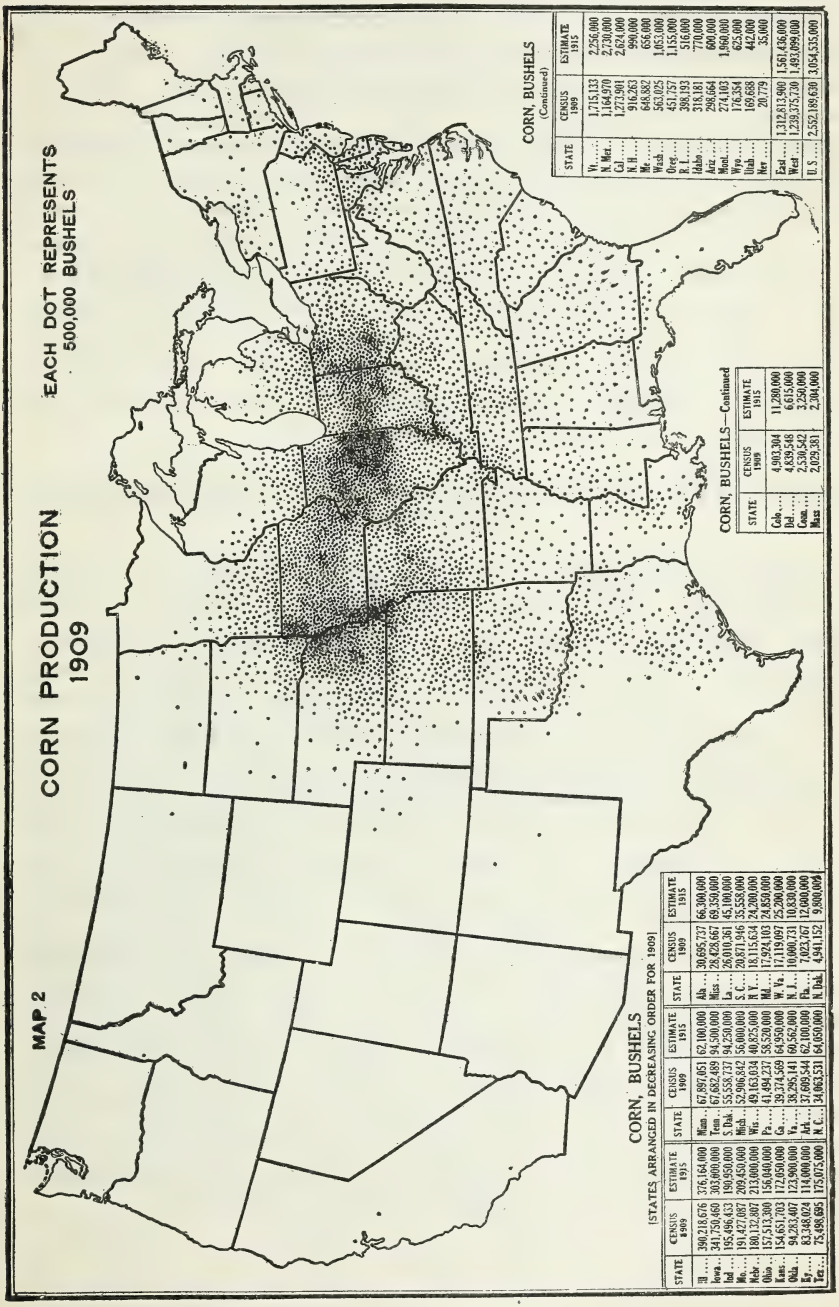
The lowest price is found in that part of the surplus-producing region which is at greatest expense in reaching foreign and domestic markets.

Farm prices rise in all directions, following the course of corn from the territories of surplus to those of deficient production.

The geographic trend in the price levels of wheat affords an illuminating comparison. The general level of American wheat prices is to a considerable degree influenced by the price received for the surplus or export wheat, which during the past 10 years constituted from 11 to 37 per cent of the production. Lowest prices for wheat are paid to farmers in the surplus-producing areas most distant from the important foreign and domestic markets—in the Northwest. The highest farm prices are found in the sections of deficient production which are farthest removed from the surplus-growing areas—in the Southeast. Prices rise in the direction of the trade currents to markets or territories of insufficient production; and these currents vary with each crop, according to the location of producing and consuming region, and according to its uses, characteristics, and distributive movement.

In like manner the farmers' price of corn may be seen in Map 1 to rise steadily in a broad general relation to the trade channels from exporting to importing sections. Widely diffused east of the Great Plains (see Map 2), and becoming by far the most important crop in acreage and aggregate value, corn production is yet concentrated within a relatively small area of dense production in the prairie region of the North Central section. This area comprises parts of nine States and forms a triangular section whose base may be seen in the eastern parts of Kansas, Nebraska, and South Dakota,

and its apex in western Ohio. Not only does this region produce the major part of the national crop, but it contributes also nearly all the corn which enters into general avenues of trade as well as practi-



STATE	CENSUS 1909	ESTIMATE 1915	STATE	CENSUS 1909	ESTIMATE 1915	STATE	CENSUS 1909	ESTIMATE 1915
Ill.	390,218,676	376,164,000	Minn.	67,897,051	62,100,000	Ala.	30,695,737	66,300,000
Iowa	341,750,460	303,600,000	Tenn.	67,682,489	94,500,000	Miss.	28,428,667	69,350,000
Ind.	195,496,433	190,950,000	S. Dak.	55,558,737	94,250,000	La.	26,010,361	45,100,000
Mo.	191,427,057	209,450,000	Mich.	52,906,842	56,600,000	S.C.	20,871,946	35,555,000
Nebr.	180,132,807	213,000,000	Wis.	49,163,034	40,025,000	N.Y.	18,115,634	24,200,000
Ohio	157,513,300	156,040,000	Pa.	41,494,237	58,520,000	Md.	17,924,103	24,850,000
Kans.	154,651,703	172,050,000	Ga.	39,374,569	64,950,000	W. Va.	17,119,097	25,200,000
Okla.	94,283,407	123,900,000	Va.	38,296,141	60,562,000	N. J.	10,000,731	10,830,000
Ky.	83,348,024	114,000,000	Ark.	37,693,544	62,100,000	Fla.	7,023,167	12,040,000
Tex.	75,498,695	175,075,000	N. C.	34,063,531	64,950,000	R. Isld.	4,941,152	3,600,000

STATE	CENSUS 1909	ESTIMATE 1915
Colo.	4,903,304	11,200,000
Del.	4,538,248	5,850,000
Conn.	4,536,545	3,250,000
Mass.	2,029,381	2,304,000

STATE	CENSUS 1909	ESTIMATE 1915
Wy.	1,715,133	2,256,000
N. Mex.	1,145,470	2,220,000
Cal.	1,271,901	2,730,000
N. H.	916,263	990,000
Me.	648,882	656,000
Wash.	563,025	1,053,000
Oreg.	451,757	1,155,000
R. I.	398,193	516,000
Idaho	316,181	770,000
Ariz.	296,664	600,000
Mont.	274,103	1,860,000
Wyo.	176,354	625,000
Utah	169,658	442,000
Nev.	20,779	35,000
East	1,312,813,900	1,561,436,000
West	1,239,375,730	1,493,099,000
U. S.	2,552,189,630	3,054,535,000

Map 2.—Distribution of corn production, 1909 (U. S. Bureau of the Census).

cally the entire gross surplus of the country. All other sections produce less than their requirements. In the Great Plains and westward—nearly half the total land area—hardly 2 per cent of the national harvest is produced.

While low price levels rule throughout the surplus-producing area, cheapest corn has been observed within its northwestern corner. This part is most disadvantageously situated with regard to the important domestic and foreign markets, which lie to the East and South. From the centrally located corn belt the product moves to practically all points of the compass, since all other sections must supplement local crops by shipments from this territory. Likewise, prices mount in the direction of this flow, attaining steadily higher levels toward the areas which (subject to the modifications of local conditions) are most distant from the regions of surplus corn. Distance or length of haul in this sense is taken to represent differences in transportation costs, in which it is ordinarily the chief factor. Other items of distributive expense are usually measured in fractions of a cent per bushel, and vary but little with distance.

PREDOMINANT TRADE ROUTES AND PRICE LEVELS, AND LOCAL VARIATION.

In the prevailing drift of the price levels a considerable degree of local variation may be seen. Such differences, which are to some extent observable on Map 1, are shown more clearly in a later detailed map. Thus the upgrade—from the pivotal area of lowest price in the corn belt—is slower in some directions than in others. It is slower throughout the sections where the traffic moves in greatest volume or where large local supplies are available—eastward across the North Central States; the upgrade becomes more rapid through regions of scant production or of relatively little consumption—westward, for instance. Aside from this irregular increase, many areas appear wherein prices paid to farmers are considerably higher or lower than in the surrounding regions.

The manifold uses of grain, plant and cob, as well as the conditions surrounding the distribution of the corn crop, result in a somewhat intricate commercial and price movement. To account for the drift of the price levels it is necessary to consider, briefly, a few international as well as domestic phases of the commerce in corn. To account for local variations it is necessary to consider such local factors as differences in costs of transportation by wagon, rail or water, rural roads, accessibility of markets, the volume and organization of the traffic as shown in elevating, and market facilities.

GENERAL FEATURES OF CORN DISTRIBUTION.

The United States produces more than twice as much corn as the rest of the world combined, but consumes practically its entire crop. Its share of the foreign commerce in corn is relatively insignificant.

Available foreign supplies are small, hence diminished consumption, and not international supply, regulates prices in years of domestic shortage.

AMERICAN CORN IN RELATION TO FOREIGN MARKETS.

Except in years of domestic shortage, the general level of American farm prices of corn is to some extent influenced by the prices prevailing at importing European markets, though to a much less

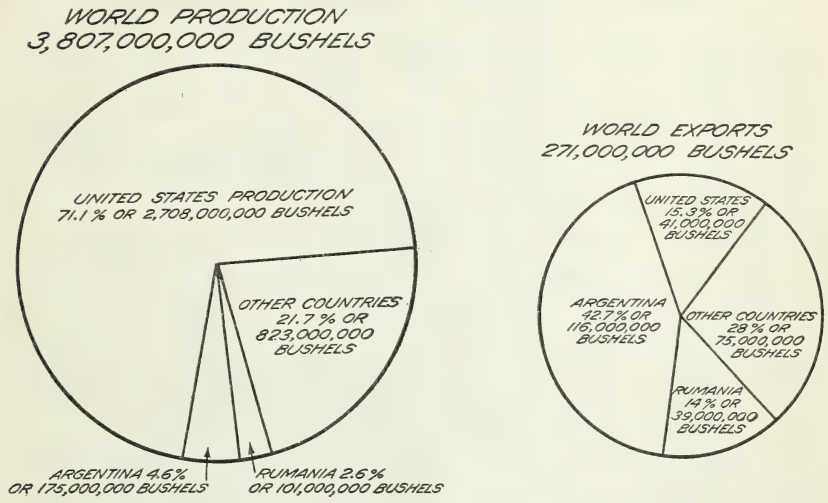


FIG. 1.—Corn: World production and commerce. Figures are averages for the five years 1909–1913, the latest available data showing usual conditions. They relate to all countries for which data are available, and represent, substantially, world production and exports.

marked degree than in the case of wheat, because of the lesser importance of corn exports. There exists, moreover, a degree of interrelation between corn, wheat, and rye prices.

The United States ordinarily produces over 70 per cent of the world's corn, more than twice the production of the rest of the world combined; yet our exports seldom exceed 1½ per cent of the domestic production. They averaged in 1909–1913 only about 15 per cent of the world's exports. On the other hand, Argentina, whose average crop is about one-sixteenth that of the United States, contributes nearly three times as much as the latter to the world commerce in corn—42 per cent of the total exports, or over half of its harvest. Practically all corn exports go to Europe.

Domestic consumption evidently absorbs practically the entire harvest of the United States. But even in our internal commerce

only about a fifth of the corn produced enters into trade channels. It is customary to say that the domestic corn is "marketed on the hoof," that the price of the United States corn crop affects the meat markets of the world, rather than the international prices of grain. The total consumption for human food, industrial uses and the feeding of work animals represents only a small share of the crop. Foreign harvests and prices do not enter as a regulating factor in years of domestic shortage since only relatively small foreign supplies are available. A surplus in adjoining countries would ordinarily have an effect upon domestic prices, as in the case of Canadian wheat and oats, but Canada and Mexico import corn from the United States.

DOMESTIC DEMAND AND CONSUMPTION VARIABLE.

The high degree of elasticity in the quantities of corn consumed is a notable feature of its use. The annual variation in the United States consumption for the six years 1911 to 1916 ranged, roughly, from 200,000,000 to 700,000,000 bushels. This fact is suggestive when considered in connection with the comparatively stable demand for other farm products, such as wheat or cotton, under normal conditions. Market prices, not only of corn but of live stock and live-stock products, govern the extent to which corn is fed to live stock, is used for human consumption within the United States, or is exported. The prices of other feeds enter also herein. The quantity fed to live stock (about three-fourths of the total production) varies greatly according to market conditions affecting each class of stock, and the quality of the crop. Especially is this true with regard to swine, whose yearly consumption averages about 7,000,000 bushels, and the number of which varies from year to year. High prices or a poor quality of corn result, in their first effect, in an unloading of hogs upon the market. The quantity used for industrial purposes is relatively stable, but represents a small fraction of the production.

The relative consumption in one section compared with another also varies greatly. By States, the per capita production varies from less than 1 bushel to 159 bushels. The per capita consumption for all purposes varies almost as widely. An average of nearly one and one-quarter billion bushels, or a little less than half the total production, is consumed in the North Central States for feeding purposes alone. Comparatively trifling quantities are consumed west of the corn belt. In general, outside of the corn States, a much smaller proportion is devoted to feeding purposes, because of deficient supply and relatively high price.

STATISTICS: DISPOSITION OF AMERICAN CORN CROP.

Over four-fifths of the crop is consumed on farms; only one-fifth enters into general trade channels, part of which is shipped again to farms. About one-sixth of the crop is consumed in cities for industrial and other purposes.

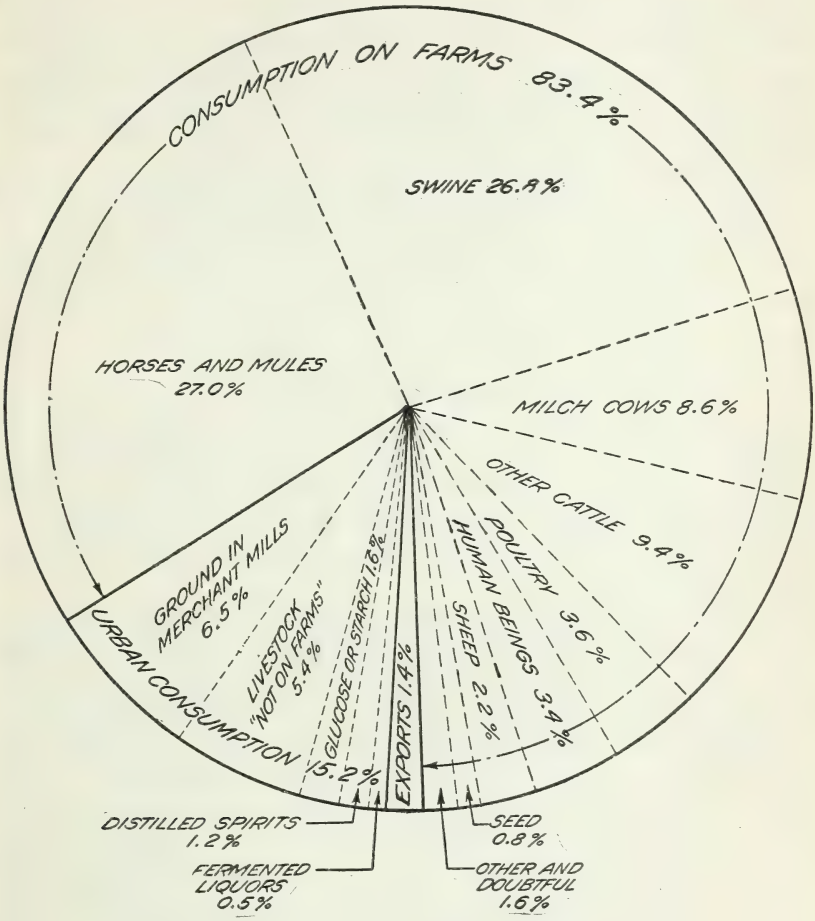


FIG. 2.—Approximate disposition of the United States corn crop.

In Table 1 data have been assembled which bear upon factors mentioned in the preceding paragraphs. Only about 82 per cent of the crop, on an average, is of merchantable quality. The quantity shipped out of the counties where grown, constituting in 1911–1915 only 19.4 per cent of the aggregate production of the United States, may be said to represent the corn moving into general trade channels; in round numbers, only one-half billion out of the two and three-quarter billion bushels. The balance remaining in the counties where grown, 80.6 per cent, consists principally of the corn consumed on

farms where it is produced, and a small percentage of sales to local feeders and local markets. The major part of the crop never leaves the farms on which it is raised. The census for 1909 reported 23 per cent of the corn crop as having been sold. In that year, therefore, 77 per cent of the corn grown was retained on the farms where it was produced. This fraction includes the soft and unmerchantable corn. In the same year (1909) 18 per cent of the total harvest was shipped out of counties where grown; thus the difference between this 18 per cent and the 23 per cent sold off the farms represents local sales, or corn sold but not shipped out of counties where grown. This amounted in that year to but 5 per cent.

The farm consumption approximates 83.4 per cent; it consists of the small fraction constituted by corn shipped from markets and farms to farms, and, chiefly, of the home-grown product. Horses and mules, as one item, and swine, each absorb more than one-fourth of the total production, three-fourths of a billion bushels each. These items are highly variable, as stated, depending upon size of crop, costs of other feeds and market prices of live stock.

The urban consumption is more stable. The items in Table 1, listed under corn disposed of in cities, total only 16.6 per cent of the national production, or about a half billion bushels. To obtain aggregate urban receipts, there should be added some quantities reshipped from market to farms, which are included in this statement under farm consumption.

The largest item in city consumption consists of the corn ground in merchant flour mills (180 million bushels or 6.5 per cent of the crop). In the Census for the year 1909, 80 per cent of the corn entering such mills was reported to be "manufactured chiefly for human consumption," and 20 per cent, or 42 million bushels, "manufactured chiefly for live stock." Additional quantities enter small custom mills, no recent data for which are available; this appears, however, to be included in the estimates of farm use. In the Census of 1909 it was reported to be 35 million bushels. Quantities fed to live stock in cities are of some importance, constituting about 5.4 per cent of production. Industrial uses absorb many million bushels, but amount to only a small percentage of the crop. Excepting its use in the manufacture of hominy, industrial demands furnish a market for poorer qualities of corn.

TABLE 1.—*Corn: Approximate distribution of the United States crop.*

[Figures are averages for the 5 years 1911–1915, where not otherwise noted.]

	Percentage of production.	Bushels.
1. Production	100.0	2,766,000,000
2. Merchantable corn	82.4	2,279,000,000
3. Shipped out of counties where grown (represents commercial movement to other than local markets) [1]	19.4	536,000,000
4. Remaining in counties where grown (mostly farm consumption, also local sales) [1]	80.6	2,230,000,000
5. Approximate consumption on farms (substantially item 4, plus shipments to farms)	83.4	2,307,000,000
6. Urban consumption and exports	16.6	459,000,000
7. Surplus over farm consumption of all States having such a surplus	19.8	546,000,000
8. Deficiency, under farm demands, of corn-deficiency States (shipments from markets to farms, and local sales to farms)	3.2	87,000,000
Difference—urban consumption and exports	16.6	459,000,000

(See Table 2A, p. 16.)

	Percentage of production.		Percentage of production.	Bushels.
Corn remaining in counties where grown (item 4)	80.6	**Approximate farm consumption** (item 5): [2]		
Gross deficiency of States whose production is under requirements for farm consumption (item 8) [1]	3.2	Horses and mules	27.0	747,000,000
		Swine	26.8	741,000,000
		Milch cows	8.6	238,000,000
		Other cattle	9.4	260,000,000
		Sheep	2.2	61,000,000
Total, approximately equal to total farm consumption	83.8	Poultry	3.6	100,000,000
		Human beings	3.4	94,000,000
		Seed	.8	22,000,000
		Other or doubtful	1.6	44,000,000
		Total consumed on farms	83.4	2,307,000,000
Shipped out of counties where grown (item 3) [1]	19.4	**Urban corn receipts and consumption** (chiefly item 3, also some shipments from farms in same county):		
Deduct shipments to farms (item 8)	3.2	Ground in merchant flour mills (chiefly for human consumption, also for feed, etc). census of 1914	6.5	180,000,000
Balance, approximately equal to urban receipts and exports	16.2	Used in manufacture of glucose or starch. Census of 1914	1.6	44,000,000
		Used in manufacture of distilled spirits, fiscal year ended June 30, 1915	1.2	32,000,000
		Used in manufacture of fermented liquors, fiscal year ended June 30, 1915	.5	14,000,000
		Exports	1.4	39,000,000
		Corn fed to live stock "not on farms," numbering (census of 1910): Horses, mules, asses, and burros, 3,470,000; dairy cows, 1,170,000; other cattle, 709,000; swine, 1,288,000; sheep, 391,000; goats, 115,000; estimated at	5.4	150,000,000
		Total of items enumerated [3]	16.6	459,000,000

[1] These figures (items 3 and 4) show the gross movement and do not take into account the intrastate corn shipments between surplus and deficiency sections of the same State.

[2] Data regarding farm consumption are based upon investigations made by N. C. Murray, assistant statistician, Bureau of Crop Estimates.

[3] Additional quantities marketed in cities are reshipped to farms, and included in consumption on farms (above).

PRODUCTION, CONSUMPTION, AND COMMERCE, BY STATES AND SECTIONS.

The foregoing is indicative of a few general phases in the disposition of the corn crop. Data for production, marketing, con-

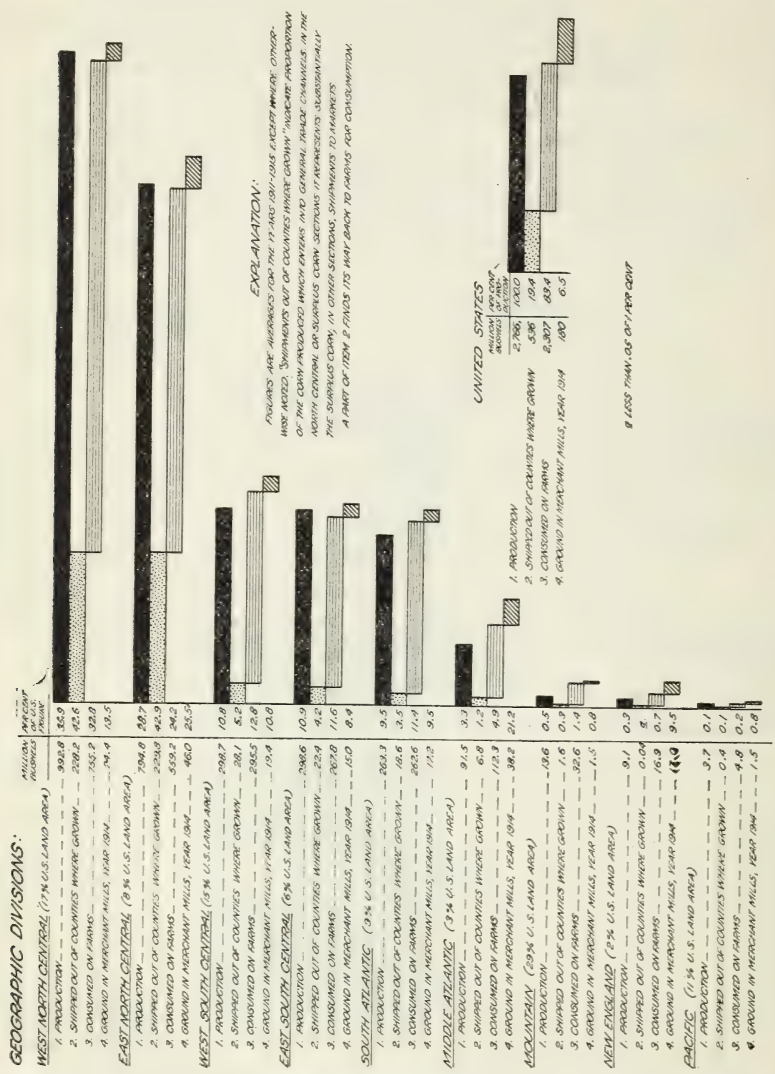

GEOGRAPHIC DIVISIONS:
MILLION BUSHELS
PERCENT OF U.S. TOTAL
WEST NORTH CENTRAL (12% U.S. LAND AREA)
1. PRODUCTION — 992.8 — 35.9
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 228.2 — 42.6
3. CONSUMED ON FARMS — 735.2 — 32.0
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 74.9 — 10.5
EAST NORTH CENTRAL (8% U.S. LAND AREA)
1. PRODUCTION — 794.8 — 28.7
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 223.3 — 42.9
3. CONSUMED ON FARMS — 559.2 — 24.2
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 46.0 — 25.5
WEST SOUTH CENTRAL (6% U.S. LAND AREA)
1. PRODUCTION — 298.7 — 10.8
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 28.1 — 5.2
3. CONSUMED ON FARMS — 235.5 — 12.8
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 19.4 — 10.8
EAST SOUTH CENTRAL (6% U.S. LAND AREA)
1. PRODUCTION — 296.6 — 10.9
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 22.9 — 4.2
3. CONSUMED ON FARMS — 262.8 — 11.6
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 15.0 — 8.4
SOUTH ATLANTIC (9% U.S. LAND AREA)
1. PRODUCTION — 263.1 — 9.5
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 16.6 — 3.5
3. CONSUMED ON FARMS — 242.6 — 11.9
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 12.3 — 9.5
MIDDLE ATLANTIC (7% U.S. LAND AREA)
1. PRODUCTION — 91.5 — 3.3
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 6.8 — 1.2
3. CONSUMED ON FARMS — 113.9 — 4.9
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 38.2 — 20.2
MOUNTAIN (29% U.S. LAND AREA)
1. PRODUCTION — 13.6 — 0.5
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 1.6 — 0.3
3. CONSUMED ON FARMS — 32.6 — 1.9
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 1.5 — 0.8
NEW ENGLAND (7% U.S. LAND AREA)
1. PRODUCTION — 9.1 — 0.3
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 0.06 — *
3. CONSUMED ON FARMS — 16.9 — 0.7
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 4.9 — 2.7
PACIFIC (11% U.S. LAND AREA)
1. PRODUCTION — 3.7 — 0.1
2. SHIPPED OUT OF COUNTIES WHERE GROWN — 0.4 — 0.1
3. CONSUMED ON FARMS — 4.8 — 0.2
4. GROUND IN MERCHANT MILLS, YEAR 1914 — 1.5 — 0.8
EXPLANATION:
PHASES ARE ARRANGED FOR THE 12 AND SIX-YEAR PERIODS EXCEPT WHERE OTHERWISE NOTED. SHIPMENTS OUT OF COUNTIES WHERE GROWN INCLUDE EXPORTATION OF THE CORN PRODUCED WHICH ENTERS INTO GENERAL TRADE CHANNELS IN THE NORTH CENTRAL OR SOUTHERN CORN SECTIONS IF NEEDED TO SUSTAIN LOCALLY THE SURPLUS CORN, IN OTHER SECTIONS, SHIPMENTS TO MARKETS A PART OF ITEM 2 FINDS ITS WAY BACK TO FARMS FOR CONSUMPTION.
UNITED STATES
MILLION BUSHELS
PERCENT OF TOTAL
1. PRODUCTION 2,765, 100.0
2. SHIPPED OUT OF COUNTIES WHERE GROWN 536 19.4
3. CONSUMED ON FARMS 2,307 83.4
4. GROUND IN MERCHANT MILLS, YEAR 1914 497 6.5
* LESS THAN 0.05 PER CENT

FIG. 3.—Corn: Geographic alignments of production in relation to consumption and trade movement.

sumption, and surplus, by geographic divisions, are shown in Tables 2 and 2A, and in figure 3.

The dominant share of the two North Central divisions in production, consumption, and commerce stands out in relief against the much smaller ratio of all items in the East and South, and the comparatively negligible quantities in the Mountain and Pacific

States. The East and South, however, draw the greater part of the corn shipments from the surplus-producing territory. In the Mountain and Pacific States the quantities produced and consumed are unimportant compared to the other sections, but the ratio of corn importation to production and the degree of deficiency are very high. Of the amount consumed on farms, about 57 per cent is apportioned to the North Central States, 35 per cent to the South, and 6 per cent to the North Atlantic States.

As indicated by figure 3, the North Central States, which comprise about 25 per cent of the total land area and less than a third of the total population, produce about 65 per cent of the crop, and consume on farms alone about three-fourths of the production of the two groups, or about half of the national crop. This section is first in the aggregate value of all live stock produced. After deducting the heavy local consumption, the remaining surplus, which is only about a fourth of the production of the two groups, still constitutes nearly seven-eighths of the amount entering trade channels. Of the 12 States in these two divisions only 7 produce a surplus; the northern 5 import considerable quantities. These "seven corn-surplus States," so called, ranked as to amount of surplus in 1911–1915, are: Illinois, Iowa, Indiana, Nebraska, Missouri, Ohio, and Kansas.

The South contains about 40 per cent of all land in farms in the United States and produced in 1911–1915 30 per cent of the corn crop. Practically the entire production is consumed locally, very little entering into trade channels. Total requirements for consumption on farms, live stock in cities, mills, and industrial uses bring large quantities southward. It is well known that corn to some extent takes the place of wheat for food purposes throughout the greater part of the South. While cheaper than wheat, corn prices usually about equal the ordinary prices of wheat in the States to the North. High and irregular price levels prevail. Local conditions and the character of the distributive machinery make for irregularity in the price zones. The highest degree of corn deficiency in the South obtains in its most southern States, and the high prices prevailing there preclude extensive use for feeding purposes. The major part is grown in the northern tier of States.

The largest movement of corn is directed toward the North Atlantic States—the comparatively densely populated industrial section. Only a very small fraction of the corn produced in these States enters trade channels. As the farm consumption is considerably in excess of production, shipments are sent here for this use as well as to fill urban requirements. An amount equal to half of production, and in most of the States largely in excess of production, passes through merchant mills alone. The deficit under combined requirements for farms and merchant mills is approximately 85 million bushels. The cities draw additional quantities for live stock and for export.

Mountain and Pacific divisions consume but 2 per cent of the national production, but even this consumption is several times the amount grown. Corn generally equals or exceeds wheat in price in these States. The percentage grown which is of merchantable quality is comparatively low.

TABLE 2.—*Corn: Geographic alignments—production, commercial movement and consumption.*

[Figures are yearly averages for 1911 to 1915, unless otherwise noted.]

States and geographic divisions.	Production.		Merchantable corn.		Shipped out of counties where grown (substantially the commercial movement).		Approximate consumption on farms and in merchant mills.		Approximate surplus or deficiency over consumption on farms and in merchant flour mills.[1]		Relative importance of States and sections.			
	Quantity.	Per capita.	Quantity.	Percentage of production.	Quantity.	Percentage of production.	Quantity.	Fraction of United States production.	Surplus.	Deficiency.	In production.	In shipments out of counties where grown.	In quantities consumed on farms.	In quantities ground in merchant mills.[1]
	Bush. (000 omitted).	*Bushels.*	*Bush. (000 omitted).*	*Per cent.*	*Bush. (000 omitted).*	*Per cent.*	*Bush. (000 omitted).*	*Per cent.*	*Bush. (000 omitted).*	*Bush. (000 omitted).*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
United States	**2,766,112**	**28.5**	**2,279,298**	**82.4**	**535,953**	**19.4**	**2,487,116**	**89.9**	**278,996**	.....	**100.0**	**100.0**	**100.0**	**100.0**
New England	9,059	1.3	6,895	76.1	36	.4	33,948	1.2	.....	24,889	.3	(2)	.7	9.5
Middle Atlantic	91,522	4.4	75,358	82.3	6,759	7.4	150,451	5.5	.....	58,929	3.3	1.2	4.9	21.2
South Atlantic	263,312	20.6	215,981	82.0	18,647	7.1	279,769	10.1	.....	16,457	9.5	3.5	11.4	9.5
East North Central	794,838	41.9	662,003	83.3	229,788	28.9	605,178	21.9	189,660	.....	28.7	42.9	24.2	25.5
West North Central	992,756	82.3	843,761	85.0	228,157	23.0	779,679	28.2	213,077	.....	35.9	42.6	32.8	13.5
East South Central	298,611	34.4	243,273	81.5	22,435	7.5	282,856	10.2	15,755	.....	10.9	4.2	11.6	8.4
West South Central	298,651	31.4	219,556	73.5	28,141	9.4	314,864	11.4	.....	16,213	10.8	5.2	12.8	10.8
Mountain	13,632	4.6	9,576	70.2	1,583	11.6	34,116	1.2	.....	20,484	.5	.3	1.4	.8
Pacific	3,731	.8	2,895	77.6	407	10.9	6,255	.2	.....	2,524	.1	.1	.2	.8
New England:														
Maine	686	.9	559	81.5	6	.9	5,499	.2	.....	4,813	(2)	(2)	(2)	.....
New Hampshire	973	2.2	735	75.5	1	.1	4,308	.2	.....	3,335	(2)	(2)	.1	.....
Vermont	1,944	5.4	1,340	68.9	.....	(2)	6,300	.2	.....	4,356	.1	(2)	.1	.....
Massachusetts	2,137	.6	1,638	76.6	4	.2	7,642	.3	.....	5,505	.1	(2)	.2	.....
Rhode Island	466	.8	359	76.8	7	1.5	1,415	(2)	.....	949	(2)	(2)	(2)	.....
Connecticut	2,853	2.4	2,264	79.4	18	.6	8,784	.3	.....	5,931	.1	(2)	.3	.....
Middle Atlantic:														
New York	20,388	2.1	14,329	70.3	359	1.8	52,165	1.9	.....	31,777	.7	(2)	1.4	.....
New Jersey	10,495	3.8	9,082	86.5	1,426	13.6	18,447	.7	.....	7,952	.4	.3	.7	.....
Pennsylvania	60,639	7.5	51,947	85.7	4,974	8.2	79,839	2.9	.....	19,200	2.2	.9	2.8	.....
South Atlantic:														
Delaware	6,635	31.9	5,663	85.4	2,147	32.4	4,999	.2	1,636	.....	.2	.4	.2	.....
Maryland	24,080	18.1	19,728	81.9	5,651	23.5	21,110	.8	2,970	.....	.9	1.0	.9	.....
Virginia	49,292	23.2	38,826	78.8	4,323	8.8	49,927	1.8	.....	635	1.8	.8	1.9	.....
West Virginia	22,652	17.3	16,716	73.8	919	4.1	27,500	1.0	.....	4,848	.8	.2	1.1	.....
North Carolina	55,534	24.1	45,532	82.0	2,083	3.8	54,238	1.9	1,296	.....	2.0	.4	2.2	.....
South Carolina	35,493	22.6	31,310	88.2	982	2.8	42,567	1.5	.....	7,074	1.3	.2	1.8	.....

Georgia	59,401	21.7	50,129	84.4	2,182	3.7	63,466	2.3		4,065	2.1	.4	2.6
Florida	10,225	12.4	8,077	79.0	360	3.5	15,962	.6		5,737	.4	.1	.7
East North Central:													
Ohio	153,991	31.0	124,643	80.9	35,356	23.0	128,245	4.6	25,746		5.6	6.6	5.1
Indiana	180,926	65.5	151,015	83.5	53,438	29.5	136,953	5.0	43,973		6.5	10.0	5.3
Illinois	343,924	58.3	295,980	86.1	136,452	39.7	209,757	7.6	134,167		12.4	25.5	8.7
Michigan	57,226	19.5	43,424	75.9	2,652	4.6	65,195	2.4		7,969	2.1	.5	2.6
Wisconsin	58,771	24.3	46,941	79.9	1,890	3.2	65,028	2.3		6,257	2.1	.3	2.5
West North Central:													
Minnesota	80,283	36.8	65,374	81.4	14,211	17.7	75,993	2.7	4,290		2.9	2.7	3.2
Iowa	353,619	159.1	330,608	93.5	102,568	29.0	230,044	8.3	123,575		12.8	19.1	9.8
Missouri	186,643	55.6	148,353	79.5	17,323	9.3	159,532	5.8	27,111		6.7	3.2	6.6
North Dakota	10,121	15.3	5,824	57.5	218	2.2	13,556	.5		3,435	.4	(2)	.6
South Dakota	73,347	114.1	53,978	73.6	22,726	31.0	60,054	2.2	13,293		2.6	4.3	2.6
Nebraska	167,928	136.2	142,589	84.9	45,936	27.4	126,548	4.6	41,380		6.1	8.6	5.4
Kansas	120,815	68.5	97,035	80.3	25,175	20.8	113,952	4.1	6,863		4.4	4.7	4.6
East South Central:													
Kentucky	96,623	41.4	73,666	76.2	6,585	6.8	85,160	3.1	11,463		3.5	1.2	3.5
Tennessee	84,599	37.8	71,748	84.8	11,551	13.7	77,123	2.8	7,476		3.1	2.2	3.0
Alabama	57,066	25.5	47,230	82.8	1,891	3.3	58,526	2.1		1,460	2.1	.4	2.4
Mississippi	60,323	32.1	50,629	83.9	2,408	4.0	62,047	2.2		1,724	2.2	.4	2.7
West South Central:													
Louisiana	38,258	21.9	31,098	81.3	3,050	8.0	39,097	1.4		839	1.4	.5	1.7
Texas	137,145	32.9	99,834	72.8	8,964	6.5	162,426	5.9		25,281	5.0	1.7	6.7
Oklahoma	72,983	37.6	47,458	65.0	14,395	19.7	62,377	2.3	10,606		2.6	2.7	2.4
Arkansas	50,265	30.3	41,166	81.9	1,732	3.4	50,964	1.8		699	1.8	.3	2.0
Mountain:													
Montana	1,077	2.6	594	55.2	24	2.2	5,906	.2		4,829	.1	(2)	.3
Wyoming	441	2.7	237	53.7	4	.9	4,221	.2		3,780	(2)	(2)	.2
Colorado	8,433	9.6	6,056	71.8	1,280	15.2	18,467	.7		10,034	.3	.2	.7
New Mexico	2,257	6.1	1,652	73.2	220	9.7	3,226	.1		969	.1	(2)	.1
Arizona	535	2.3	428	80.0	32	6.0	1,009	(2)		474	(2)	(2)	(2)
Utah	350	.9	232	66.3	9	2.6	436	(2)		86	(2)	(2)	(2)
Nevada	33	.3	27	81.8		(2)	100	(2)		67	(2)	(2)	(2)
Idaho	506	1.3	350	69.2	14	2.8	751	(2)		245	(2)	(2)	(2)
Pacific:													
Washington	936	.7	712	76.1	43	4.6	1,975	.1		1,039	(2)	(2)	.1
Oregon	723	1.0	464	64.2	11	1.5	949	(2)		226	(2)	(2)	(2)
California	2,072	.8	1,719	83.0	353	17.0	3,331	.1		1,259	.1	.1	.1
United States	2,766,112	28.5	2,279,298	82.4	535,953	19.4	2,487,116	89.9	[3] 455,845	[3] 176,849	100.0	100.0	100.0
Domestic exports (including equivalent of corn meal)									39,000				

[1] Figures for corn ground in merchant flour mills are from the Census of 1914.

[2] Less than one-tenth of 1 per cent.

[3] Gross surplus and deficiency.

TABLE 2A.—*Corn: Production, consumption on farms and in merchant mills; surplus and deficiency.*

[Figures are yearly averages for 1911–1915, unless otherwise noted.]

State or geographic division.	Production.	Ground in merchant mills, 1914 census.	Consumed on farms (approximate).			Surplus or deficit over consumption on farms only.	
			Quantity.	Per cent of production.	Per cent of United States production.	Surplus.	Deficit.
	Thousand bushels.		*Thousand bushels.*	*Per cent.*	*Per cent.*	*Thousand bushels.*	
United States	**2,766,112**	**180,116**	**2,307,000**	**83.4**	**83.4**	[1] **459,112**	
New England	9,059	17,048	16,900	187.0	.6		7,841
Middle Atlantic	91,522	38,151	112,300	123.0	4.0		20,778
South Atlantic	263,312	17,169	262,600	100.0	9.5	712	
East North Central	794,838	45,978	559,200	70.0	20.2	235,638	
West North Central	992,756	24,379	755,300	76.0	27.3	237,456	
East South Central	298,611	15,056	267,800	90.0	9.7	30,811	
West South Central	298,651	19,365	295,500	99.0	10.7	3,151	
Mountain	13,632	1,515	32,600	239.0	1.2		18,968
Pacific	3,731	1,455	4,800	129.0	.2		1,069
New England:							
Maine	686	4,199	1,300	190.0	.1		614
New Hampshire	973	2,208	2,100	216.0	.1		1,127
Vermont	1,944	3,800	2,500	129.0	.1		556
Massachusetts	2,137	4,042	3,600	168.0	.1		1,463
Rhode Island	466	815	600	129.0	[2]		134
Connecticut	2,853	1,984	6,800	238.0	.2		3,947
Middle Atlantic:							
New York	20,388	21,065	31,100	153.0	1.1		10,712
New Jersey	10,495	2,447	16,000	152.0	.6		5,505
Pennsylvania	60,639	14,639	65,200	108.0	2.3		4,561
South Atlantic:							
Delaware	6,635	499	4,500	68.0	.2	2,135	
Maryland	24,080	1,610	19,500	81.0	.7	4,580	
Virginia	49,292	5,127	44,800	91.0	1.6	4,492	
West Virginia	22,652	3,300	24,200	107.0	.9		1,548
North Carolina	55,534	2,538	51,700	93.0	1.9	3,834	
South Carolina	35,493	267	42,300	119.0	1.5		6,807
Georgia	59,401	3,666	59,800	101.0	2.1		399
Florida	10,225	162	15,800	155.0	.6		5,575
East North Central:							
Ohio	153,991	9,545	118,700	77.0	4.3	35,291	
Indiana	180,926	14,053	122,900	68.0	4.4	58,026	
Illinois	343,924	10,257	199,500	58.0	7.2	144,424	
Michigan	57,226	5,395	59,800	104.0	2.2		2,574
Wisconsin	58,771	6,728	58,300	99.0	2.1	471	
West North Central:							
Minnesota	80,283	3,093	72,900	91.0	2.6	7,383	
Iowa	353,619	3,344	226,700	64.0	8.2	126,919	
Missouri	186,643	8,532	151,000	81.0	5.4	35,643	
North Dakota	10,121	56	13,500	133.0	.5		3,379
South Dakota	73,347	154	59,900	82.0	2.2	13,447	
Nebraska	167,928	2,248	124,300	74.0	4.5	43,628	
Kansas	120,815	6,952	107,000	88.0	3.9	13,815	
East South Central:							
Kentucky	96,623	4,760	80,400	83.0	2.9	16,223	
Tennessee	84,599	8,023	69,100	82.0	2.5	15,499	
Alabama	57,066	1,926	56,600	99.0	2.1	466	
Mississippi	60,323	347	61,700	102.0	2.2		1,377
West South Central:							
Louisiana	38,258	597	38,500	101.0	1.4		242
Texas	137,145	8,627	153,800	112.0	5.6		16,655
Oklahoma	72,983	5,577	56,800	78.0	2.0	16,183	
Arkansas	50,265	4,564	46,400	92.0	1.7	3,865	
Mountain:							
Montana	1,077	6	5,900	548.0	.2		4,823
Wyoming	441	21	4,200	952.0	.2		3,759
Colorado	8,433	1,367	17,100	203.0	.6		8,667
New Mexico	2,257	26	3,200	142.0	.1		943
Arizona	535	9	1,000	187.0	[2]		465
Utah	350	35	400	114.0	[2]		50
Nevada	33		100	303.0	[2]		67
Idaho	506	51	700	138.0	[2]		194
Pacific:							
Washington	936	475	1,500	160.0	.1		564
Oregon	723	49	900	124.0	[2]		177
California	2,072	931	2,400	116.0	.1		328
United States	2,766,112	180,116	2,307,000	83.4	83.4	546,334	87,212

[1] Net surplus over average farm consumption. [2] Less than one-tenth of 1 per cent.

Data regarding farm consumption are based upon unpublished investigations made by N. C. Murray, Assistant Statistician, Bureau of Crop Estimates.

A brief analysis of the salient features of Tables 2 and 2A, by geographic sections, follows:

West North Central States.—This division leads in corn production with 35.9 per cent of the total; contains 17 per cent of the total land area and 13 per cent of the population. It is, however, second to the eastern division of the North Central States in the quantity, as well as in the percentage, of the crop which moves to markets. Freight rates on corn to the Atlantic seaboard or to the South are higher from the corn States west of the Mississippi. This places those States at a disadvantage in selling either for export or to important domestic markets, and consequently encourages in these western States the feeding of corn to live stock and the production of meat. Prices are lowest in this group. It ranks first in live-stock production and quantities consumed on farms. The per capita production ranges from 15 to 159 bushels, by States. The section is only third in the quantity of corn ground in merchant mills. Out of its seven States the three farthest north, North Dakota, South Dakota, and Minnesota, do not usually produce a surplus. Here higher prices prevail, increasing with distances from the area of surplus.

East North Central States.—Second in point of production, this division shipped in the five years under consideration the largest quantity and highest percentage out of counties where grown (42.9 per cent). Prices here are higher than in the corn States to the west, but lower than in other sections. A strategic position at the head of the Great Lakes, between the Ohio and Mississippi Rivers, with cheap water transportation and nearness to corn-deficiency States, gives this division more favorable conditions with regard to markets. It ships out a larger share of its crop than the corn States west of the Mississippi and feeds lesser proportions. This division is first in the quantities consumed by merchant flour mills. It is more densely populated than the western corn States, and its per capita production ranges from 20 to 66 bushels. In Michigan and Wisconsin, however, where production is less than consumption, prices are higher than in other States of this division.

South Central States.—The east and west south central divisions are about equal as to quantities produced; together they raise a fifth of the United States crop. Three out of the 16 States—Kentucky, Tennessee, and Texas—produce the major part of the crop of this group of States. The general conditions pointed out in the discussion of the Southern States with regard to corn deficiency and prices prevail here.

South Atlantic States.—In production, this section measured about 10 per cent of the national total. The three northern States (Delaware, Maryland, and Virginia) contributed about 65 per cent of the quantity entering trade channels from this group of States. The deficit under combined requirements of farms and merchant mills is around 16 million bushels; to this should be added demands for urban consumption and industrial uses, as well as the movement to the seaports for export. Farm prices of corn in the more southern States of this section are higher than in most other States except in the far southwest. The same general conditions obtain as were indicated for the entire southern group.

Middle Atlantic States.—Containing 3 per cent of the total land area and leading in point of population (21 per cent), this section produces only 3 per cent of the national corn. Here farm uses absorb substantially the entire local production, which is less than needs even for this purpose. It ranks second as to quantities ground in merchant mills. To requirements for the latter, which swell the volume of shipments to this group by 59 million bushels, should

be added about 10 million bushels more, on an average, moving to the seaports for export, also the requirements for urban consumption.

NEW ENGLAND STATES.—The greatest relative deficiency of corn prevails in this section. Although production of other cereals has declined rapidly in these States, corn has retained its place. Local production is less than 1 per cent of the national crop and is consumed almost entirely on the farms. The farm consumption alone is about twice the local production. New England merchant flour mills receive about 17 million bushels of corn, or double the production of the division, but only about a half-million bushels of wheat. Seaports draw some additional quantities for export. A total of 81 glucose and starch factories, with an aggregate consumption of 40 million bushels of corn, were reported by the 1914 census. Of such factories, 51 were found in Maine alone and 58 in all in the entire division. Within recent years Argentine corn, to the amount of several million bushels annually, has been imported into this section for industrial uses.

MOUNTAIN STATES.—Colorado produces 60 per cent of the corn raised in these eight States, whose production constitutes only one-half of 1 per cent of the national crop. The figures indicate a flow of several million bushels westward for consumption, but in proportion to demands of other sections such shipments are unimportant. Corn as a rule exceeds wheat in price throughout a large part of this group. In its southwestern part the highest corn prices in the United States are found.

PACIFIC STATES.—Barley takes the place of corn in the Pacific division for feeding purposes and rice, to some extent, for brewing. Production and consumption are lowest here. Transportation expense from the distant corn-surplus States almost precludes its use, except in comparatively small quantities for industrial purposes. High prices prevail for the small quantity grown.

Details appear in Tables 2 and 2A. Figures of consumption on farms are approximate only. They should be regarded as showing in a general way the geographic alignments and are a rough measurement, particularly useful in showing the relative position of States and sections as to surplus or deficiency. With respect to shipments out of counties where grown, the figures should be regarded as indicating the corn moving into general trade channels. They do not usually indicate the surplus of a State because of intrastate shipments from counties producing surplus to those producing insufficient corn.

DETAIL PRICE MAP AND LOCAL PRICE FACTORS.

In map No. 3 the geographic variation in farm prices of corn has been shown in greater detail. This map is based on the same data as map No. 1, but a 5-cent price unit has been used (instead of 10 cents) to throw into relief local differences. A smaller unit has not appeared feasible, because of the irregularity of minor fluctuations, due to such causes as local harvest conditions and the quality of the crop.

Subordinate to the general trend of the price levels which have already been outlined, much local price variation is observable on this map. Prices rise more rapidly and irregularly in some directions, particularly in areas of insufficient production. A difference in price between sections of the same State amounting to at least 15 cents a bushel, may be seen in most States. The difference in corn prices between parts of Missouri, as an instance in point, is greater than the

THE NORRIS PETERS CO., WASHINGTON, D. C.

CORN

DETAIL PRICE MAP SHOWING NORMAL GEOGRAPHIC VARIATIONS IN PRODUCERS' PRICES.
FIGURES REPRESENT A FIVE YEAR AVERAGE, BY COUNTIES, FOR THE YEARS 1910-1914.

EXPLANATION.

AVERAGE FARM PRICES PER BUSHEL

- BLANKS INDICATE AREA OF LITTLE OR NO PRODUCTION ACCORDING TO THE 1909 CENSUS.
- 45¢ - 49¢
- 50¢ - 54¢
- 55¢ - 59¢
- 60¢ - 64¢
- 65¢ - 69¢
- 70¢ - 74¢
- 75¢ - 79¢
- 80¢ - 84¢
- 85¢ - 89¢
- 90¢ - 94¢
- 95¢ - 99
- $1.00 - $1.04
- • LEADING GRAIN CENTERS.

EACH OF THE ABOVE PRICE ZONES IS DESIGNATED ON THE MAP BY THE LOWEST FIGURE

MAP No. 3

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normal cost of shipping from St. Louis to some European markets. Considerable unevenness in the price levels occurs throughout the Appalachian and other mountainous regions and in general throughout the South. Corn prices in the Ozark Mountain section in Missouri are higher than in the surrounding territory.

CITY AND FARM CONSUMPTION CONTRASTED.

In the trade channels of corn two distinct currents are apparent, each having a direct bearing upon the irregularities in the slope of the price levels. One relates to the farm consumption—of home-grown corn as well as of smaller quantities shipped in, the other to the movement to cities, either for concentration and reshipment or for consumption.

In the farm consumption such factors as availability of transportation facilities, condition of roads, length of hauls, and lack of marketing organization exert a marked influence on the price levels. The quantities of corn absorbed locally vary greatly with market conditions of grain and live stock, the size of the local harvest, and the ratio of corn to live-stock prices. Trade currents are apt to be irregular in quantity, sometimes in direction also, and farm practice varies with respect to feeding and selling to local or general markets.

The movement to large markets is aided by a highly organized commercial organization and excellent transportation facilities. Moreover, freight rates and competition among large markets tend to stabilize price differences between cities and their tributary territories.

FARM CONSUMPTION.

Economic conditions attending farm consumption make for price irregularity.

Transportation and costs of hauling.

As farm consumption absorbs more than four-fifths of the production, the preponderant influence of farm conditions is evident. Farm conditions are such as to make for price irregularity. The average cost of hauling a few miles from or to shipping points in many regions is greater than the cost of shipping corn to European markets in normal times. An idea of sectional differences in costs of hauling may be gained from the following table showing the average costs as well as the hauling expense from most remote farms.

TABLE 3.—*Average cost of hauling corn from farms to shipping points, 1906.*[1]

State or territory.	Number of counties reported.	Average.					From most remote farms to shipping points.				
		Miles to shipping point.	Days for round trip.	Pounds in one load.	Cost per load.	Cost per 100 pounds.	Miles to shipping point.	Days for round trip.	Pounds in one load.	Cost per load.	Cost per 100 pounds.
North Atlantic:											
New York	3	8.6	0.9	2,917	$3.45	$0.12	25.0	3.0	3,000	$12.00	$0.40
New Jersey	4	3.2	.4	2,475	1.38	.06	5.0	.5	1,400	2.00	.14
Pennsylvania	22	6.6	.6	3,020	2.11	.07	20.0	1.0	2,000	2.50	.12
South Atlantic:											
Maryland	13	5.4	.5	2,985	1.88	.06	12.5	2.0	4,000	10.00	.25
Virginia	32	8.6	1.0	2,416	3.23	.13	22.5	2.0	1,500	5.00	.33
West Virginia	17	10.2	.8	2,124	2.74	.13	25.0	2.0	800	6.00	.75
North Carolina	31	10.6	.8	1,584	1.96	.12	50.0	4.0	1,600	11.00	.69
South Carolina	7	11.7	.9	1,607	2.11	.13	30.0	2.0	1,500	4.00	.27
Georgia	30	11.3	1.1	1,553	2.76	.18	60.0	8.0	1,000	16.00	1.60
Florida	6	7.1	.6	1,533	2.20	.14	17.0	2.0	2,000	8.00	.40
North Central:											
Ohio	51	6.0	.6	3,025	1.93	.06	30.0	2.0	2,000	8.00	.40
Indiana	67	7.4	.6	2,891	1.74	.06	25.0	2.0	2,500	6.00	.24
Illinois	66	5.7	.5	2,754	1.47	.05	24.0	1.5	3,500	6.00	.17
Michigan	17	7.3	.6	2,612	1.78	.07	20.0	1.0	3,000	2.00	.07
Wisconsin	6	7.8	.6	2,583	1.75	.07	16.0	1.0	1,500	3.00	.20
Minnesota	21	7.8	.7	2,807	2.24	.08	20.0	1.0	3,250	3.50	.11
Iowa	69	6.1	.6	2,392	1.79	.07	16.0	2.0	3,500	7.00	.20
Missouri	63	8.8	.8	2,122	2.02	.10	25.0	2.0	1,500	5.00	.33
North Dakota	31	10.6	.8	1,584	1.96	.12					
South Dakota	22	13.3	.9	2,932	3.07	.10	50.0	2.5	2,500	15.00	.60
Nebraska	55	9.1	.7	2,960	2.15	.07	26.5	2.5	4,000	10.00	.25
Kansas	63	7.9	.6	2,908	1.75	.06	25.0	2.0	3,000	7.00	.23
South Central:											
Kentucky	66	9.8	1.0	2,263	2.82	.12	37.5	5.0	1,800	15.00	.83
Tennessee	48	9.5	.8	1,925	1.88	.10	30.0	3.0	1,600	6.00	.38
Alabama	19	12.9	1.2	1,689	3.13	.19	37.5	4.0	1,200	10.00	.83
Mississippi	10	11.6	1.3	1,395	3.06	.22	25.0	3.0	1,200	4.50	.38
Louisiana	5	11.9	1.2	1,850	3.48	.19	32.5	4.0	2,000	12.00	.60
Texas	71	14.0	1.2	2,084	3.35	.16	47.2	4.5	1,100	10.12	.92
Indian Territory	4	7.4	.6	1,730	1.61	.09	15.0	1.0	2,000	2.75	.14
Oklahoma	20	11.9	.9	2,420	2.56	.11	45.0	3.0	2,000	7.50	.38
Arkansas	25	13.0	1.2	1,642	3.26	.20	45.0	4.0	1,600	8.00	.50

Western:											
Colorado	4	24.0	2.1	3,375	6.17	.18	40.0	4.0	2,000	12.00	.60
New Mexico	8	29.4	2.7	2,668	10.12	.38	80.0	5.0	2,000	15.00	.75
Arizona	2	11.5	1.3	3,750	6.82	.18	27.5	2.5	4,500	18.75	.42
California	3	8.5	.9	3,133	3.82	.12	15.0	2.5	1,900	13.75	.72
Geographic division:											
North Atlantic	29	5.9	.6	2,851	2.12	.07					
South Atlantic	136	7.8	.8	2,479	2.66	.11					
North Central	531	7.1	.6	2,758	1.78	.06					
South Central	268	11.0	.9	2,078	2.43	.12					
Western	17	13.7	1.3	3,214	4.95	.15					
States and territories represented	981	7.4	.6	2,696	1.78	.07					

[1] From "Costs of hauling crops from farms to shipping points," by Frank Andrews. Bul. 49, U. S. Dept. Agri., Bureau of Statistics.

The figures for corn were based upon shelled corn, and costs refer to expense for round trips.

In the surplus-producing North Central States, costs of hauling will be observed to be lower than elsewhere and fairly uniform over large areas. The Southern and Western States are marked by long hauls and high hauling costs, as well as great irregularity in the price areas. Irregular price levels may be observed (Map 3) throughout mountain sections. Accessibility to markets, the existence or absence of good roads or of water transportation, is often reflected in material price variations within small areas. Thus, in a report of the Waterways Commission it is shown that farmers along navigable rivers in Tennessee receive several cents per bushel more for their corn than those in surrounding regions. In the more remote farms the cost of hauling corn to or from shipping points appears to be almost prohibitive. Such isolated areas have an almost entirely local market. In the western irrigated sections—distant from markets—the price of alfalfa hay has been known to drop from around $20 per ton in a year of local shortage to below $5 in a year of local surplus.

To the causes making for price irregularity because of farm conditions may be added the preference for ear corn, the trade for which is local, and the added expense of shelling corn to lessen freight charges.

Local conditions are thus seen to depress farm prices of corn in regions of surplus production, influences of the character mentioned often causing deviations from the general geographic arrangement of prices. But in areas of insufficient production the described drawbacks incident to bringing in corn tend to increase the prices obtained by farmers. Map 2, showing density of production, should be compared with Map 3, which shows prices. The relationship is apparent, for prices drop wherever production is shown to be denser. In the regions of deficient production such areas as show notably heavy corn crops form price depressions. For instance, in Maryland, Delaware, and southeastern Pennsylvania production is greater and corn prices are lower than in surrounding territories; this contrasts with the tendency of corn prices to increase east and southward. In central Tennessee, also, lower prices and greater production will be noted than in the southwestern part of the State.

URBAN MARKETS.

Market receipts, shipments, and consumption.
Urban markets have a stabilizing effect upon price differences.

The corn entering into trade channels has been seen to constitute about 19.4 per cent of the total during 1911–1915. Like other elements in corn distribution, this percentage varies from year to year. Practically all of such shipments move to urban markets, from which in turn approximately 3 per cent is shipped back to farms.

Demands for urban consumption constitute approximately 15 per cent of the total production. Additional quantities, however, are concentrated in the markets for reshipment to domestic and foreign markets. Although urban markets draw only a fifth of the domestic crop, they influence to a considerable degree the general level of farm prices, for the prices obtaining there represent market conditions and the available returns for corn as a cash crop.

Large markets, through their commercial organizations, credit and elevating facilities, tend to stabilize the geographic differences in farm prices. The comparative evenness of the price levels throughout the corn belt, wherein most of the great markets are situated, contrasts with the irregular price levels in areas where no points of large concentration appear. The difference between the prices at any two markets tends to be regulated in the long run by transportation expenses. The prices at markets in areas of insufficient production will generally be fixed by the prices at the nearest surplus point plus transportation expenses. Hence, market prices in cities tend to conform to the general zones for producers' prices, as shown in Maps 1 and 3.

In such farm products as wheat and meat products, which are for human consumption, the relation of production to population dominates the trend of price levels. But large centers of population do not so directly dominate the direction of price increases in such products as corn, which are not destined chiefly for human food but more for consumption by live stock.

Receipts, shipments, and apparent consumption of the largest markets are shown in Table 4. Half a dozen primary markets located in the corn States receive the major part of the commercial corn; i. e., "shipments out of counties where grown." Of these, Chicago is by far the most important. Into the 14 cities listed as primary markets are shipped 264 million out of the 500 million bushels entering into trade channels; the greater part of this comes from the North Central States, in which these markets are located. Although industrial uses, particularly important in such cities as Chicago, Indianapolis, St. Louis, and Peoria (Ill.), absorb large quantities, two-thirds of the total receipts in the primary markets are reshipped. Farm prices are naturally higher in regions near these primary markets than in more remote regions. (See Maps 2 and 3.)

TABLE 4.—*Corn: Commercial movement to and from leading corn markets, and indicated consumption, in five-year averages (1911–1915).*

[From unofficial returns. Allowance should be made for such duplication as intermediate markets crediting themselves with through shipments.]

Market.	Receipts.	Shipments.	Apparent consumption.
Primary markets.	*Bushels.*	*Bushels.*	*Bushels.*
Chicago	110,194,000	78,637,000	31,557,000
Omaha	25,046,000	23,234,000	1,812,000
St. Louis	21,562,000	12,135,000	9,427,000
Kansas City	20,472,000	13,989,000	6,483,000
Peoria	17,672,000	10,179,000	7,493,000
Indianapolis	14,685,000	4,178,000	10,507,000
Milwaukee	12,770,000	9,831,000	2,939,000
Louisville	10,400,000	6,211,000	4,189,000
Minneapolis	8,900,000	6,620,000	2,280,000
Cincinnati	8,651,000	5,281,000	3,370,000
Toledo	4,395,000	2,298,000	2,097,000
Cleveland	4,102,000	1,500,000	2,602,000
Detroit	3,347,000	2,117,000	1,230,000
Duluth	1,464,000	1,193,000	271,000
Total	263,660,000	177,403,000	86,257,000
Denver	2,110,000	(1)	2,110,000
Buffalo	18,737,000	(1)	(1)
		Exports.	
Baltimore	14,845,000	11,981,000	2,864,000
New York	12,660,000	7,323,000	5,337,000
New Orleans	5,158,000	3,835,000	1,323,000
Philadelphia	3,896,000	1,947,000	1,949,000
Boston	2,803,000	2,616,000	187,000
Newport News	(1)	1,844,000	(1)
Galveston	(1)	338,000	(1)
Pacific markets.			
San Francisco	342,000	137,000	205,000
Seattle	744,000	30,000	714,000

[1] No data available.

To the above figures should be added relatively insignificant quantities of corn meal. Largest receipts of corn meal appear at New York, 662,000 barrels, and Baltimore, 405,000 barrels. A few other markets show small receipts, none averaging over 50,000 barrels.

FREIGHT RATES.

Freight rates constitute an important factor affecting differences in price between two regions. Corn frequently takes a lower rate than wheat, for not only is the weight per bushel slightly less but frequently a lower freight rate per 100 pounds applies. A detailed statement of freight rates is beyond the purpose of this publication, but a few of the more important phases may be noted briefly in their relation to differences in farm prices of corn.

Distance is an important element in freight rates, but they are not directly proportionate thereto. The following illustration will serve:

Distance rates between points in Iowa and Missouri, C. B. & Q. Ry.

[Freight rates per bushel of corn (carlot shipments) in 1916.]

Number of miles.	Rate per bushel.
10	$0.031
100	.071
200	.088
300	.102
400	.115

Thus forty times the distance takes less than four times the ten-mile rate. The through rates from a point in the corn belt apply to all New England destinations; the rate to Baltimore applies equally to Richmond and Newport News.

Moreover, the sum of a series of local rates covering a given route is usually higher than the through rate over the same route. Also, export grain usually moves to the seaboard at lower rates than does grain for domestic use. A higher rate applies to grain products than to grain. Lower rates usually prevail at points possessing water transportation, which serves as a potential if not an actual competitive factor.

The influence of markets upon farm prices, as well as the tendency to concentrate the commercial corn in the large commercial centers, is affected by freight rates.

By means of the milling-in-transit rate, corn may be stopped en route, milled, cleaned, or dried, and the product moved on again at the original rate charged for a through corn shipment, instead of taking the local rate to the milling point and the higher rate for grain products to eventual destination. On some lines the rate for grain products is applied to such traffic.

It may be noted that the tendency to manufacture cereal products near sources of supply and lessen transportation costs is somewhat offset by this higher rate for grain products as well as by reshipping and milling-in-transit rates.

Rates on corn from the North Central States to the Southeast are considerably higher than to New England or eastern points; before the war they were higher even than transportation costs from points in the corn belt to British markets. This fact is suggestive when considered in connection with the higher prices paid to corn growers in the Southeast, where production is less than consumption.

The difference in freight rates between carload and less-than-carload lots represents still another factor in the price zones, affecting especially sections in which corn traffic is small. In the territory east of the Mississippi and south of the Potomac and Ohio Rivers the same rate applies to carload and less-than-carload lots of corn.

COSTS OF PRODUCTION AND FARM PRICES, GEOGRAPHIC DIFFERENCES.

An analysis of the practical bearing of varying price levels on local types of agriculture is incomplete without consideration of cost to production. Two elements are involved here: (1) The cost of producing crops upon an acreage basis, and (2) the number of bushels produced to the acre.

Figure 4 throws into relief the relationship of these factors. It will be observed that often areas of high price show minimum net returns, higher prices being offset either by high costs of production or low yields in bushels to the acre. Varying land rental or interest charges, also costs of commercial fertilizer, enter into the cost factor.

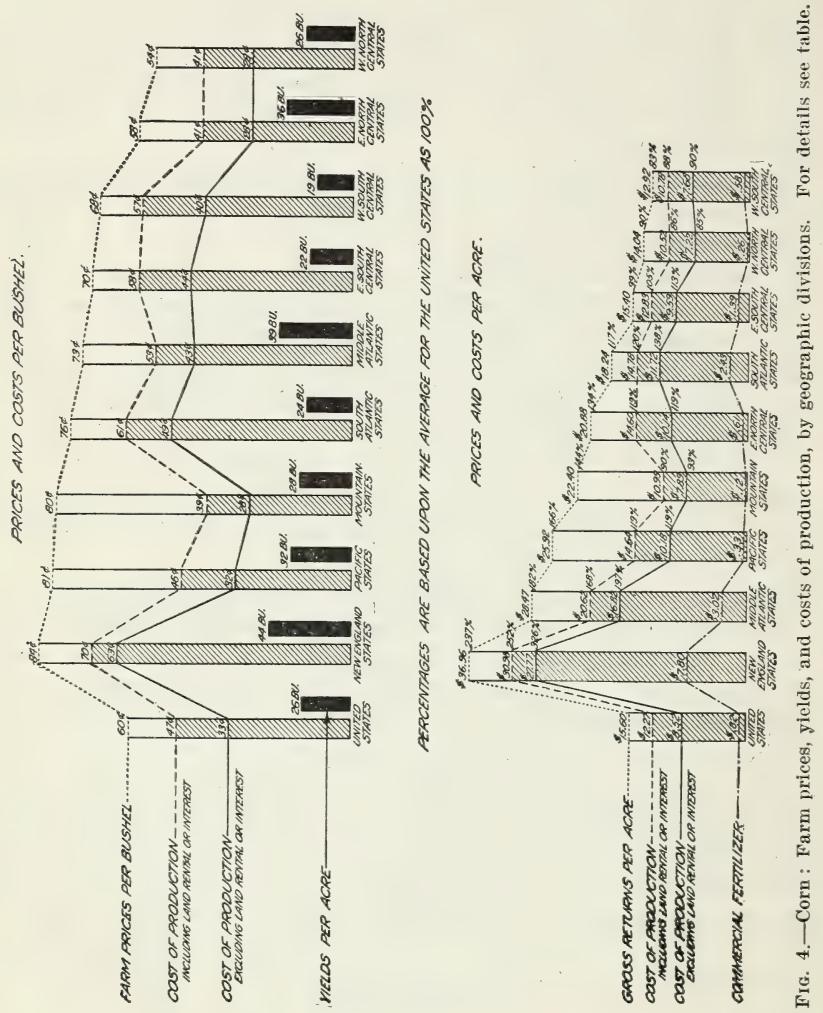

PRICES AND COSTS PER BUSHEL.
PRICES AND COSTS PER ACRE.
PERCENTAGES ARE BASED UPON THE AVERAGE FOR THE UNITED STATES AS 100%
FARM PRICES PER BUSHEL
COST OF PRODUCTION — INCLUDING LAND RENTAL OR INTEREST
COST OF PRODUCTION — EXCLUDING LAND RENTAL OR INTEREST
YIELDS PER ACRE
GROSS RETURNS PER ACRE
COMMERCIAL FERTILIZER
UNITED STATES
NEW ENGLAND STATES
MIDDLE ATLANTIC STATES
EAST CENTRAL STATES
WEST CENTRAL STATES
SOUTH ATLANTIC STATES
SOUTH CENTRAL STATES
MOUNTAIN STATES
PACIFIC STATES

FIG. 4.—Corn: Farm prices, yields, and costs of production, by geographic divisions. For details see table.

In the upper illustration on figure 4 prices and costs per bushel are given, and in the lower the data are upon an acreage basis.

The New England States stand out prominently with highest prices per bushel and highest production per acre. But these are offset by maximum costs of production (in which high values of commercial fertilizer enter), with a resulting low ratio of money returns.

The favorable combination of high price per bushel and lowest cost per acre obtains in the Southern States, but average yields are so low as to make the cost per bushel very high, with resulting minimum net returns. Highest net returns are indicated for the Mountain and Pacific States. Here, however, a relatively lower percentage of merchantable corn must be taken into consideration.

Details follow in Tables 5 and 5A. Relationships can best be observed in the percentages, based upon the United States as 100 per cent. By way of example: Iowa farm price per bushel, only 85 per cent of the average for the United States, but yield per acre 135 per cent; and combining the two in gross returns to the acre, 114 per cent. Costs of production in Iowa, however, are slightly above the average, being 101 per cent, and the ratio of returns to cost is 145 per cent.

TABLE 5.—*Corn: Geographic differences in values and costs of production.*[1]

PER ACRE.

State and geographic divisions.	Average gross returns, 1911–1915 (price per bushel × yield).[1]	Cost of production, 1909.			Ratio of cost to gross returns[2] (cost = 100 per cent).	Value of by-products, 1909.	Comparison of preceding differences in percentages of the United States average as base (100 per cent).		
		Cost, including land rental or interest.	Cost, excluding land rental or interest.	Commercial fertilizer in total cost.			Gross returns.	Cost, including land rental or interest.	Cost, excluding land rental or interest.
	Per acre	*Per acre*	*Per acre*	*Per acre*	*Per cent*	*Per acre*	*Per cent*	*Per cent*	*Per cent*
United States	**$15.60**	**$12.27**	**$8.52**	**$0.82**	**127**	**$1.20**	**100**	**100**	**100**
New England	36.96	30.98	27.77	7.80	120	7.78	237	252	326
Middle Atlantic	28.47	20.62	16.82	3.02	138	5.04	182	168	197
South Atlantic	18.24	14.78	11.72	2.43	124	2.34	117	120	138
East North Central	20.88	14.60	10.14	.61	143	2.23	134	119	119
West North Central	14.04	10.52	7.22	.26	133	.94	90	86	85
East South Central	15.40	12.83	9.59	1.39	120	1.16	99	105	113
West South Central	12.92	10.78	7.68	.58	120	.90	83	88	90
Mountain	22.40	10.99	7.89	.12	204	1.80	144	90	93
Pacific	25.92	14.64	10.18	.33	177	3.11	166	119	119
New England:									
Maine	35.70	37.05	34.55	10.67	96	5.50	229	302	406
New Hampshire	34.76	30.73	27.54	5.92	113	7.83	223	250	323
Vermont	33.60	27.68	24.20	4.48	121	9.02	215	226	284
Massachusetts	36.90	29.04	25.54	8.00	127	9.00	237	237	300
Rhode Island	40.32	28.12	25.37	8.00	143	9.00	258	229	298
Connecticut	39.48	33.26	29.43	9.70	119	6.33	253	271	345
Middle Atlantic:									
New York	28.86	21.84	18.15	2.80	132	5.91	185	178	213
New Jersey	27.74	22.08	17.91	4.26	126	4.96	178	180	210
Pennsylvania	28.29	17.93	14.41	2.00	157	4.25	181	146	169

[1] Costs of production from a special inquiry of the Bureau of Crop Estimates ("Crop Reporter," April, 1911). Although the data were compiled in the year 1909, they were collated on a uniform and comparable basis, and for the present purpose of comparing average cost conditions in one State or section with another they possess particular value.

[2] Excluding by-products, which were considered as being offset, roughly, by values of farm manure applied.

TABLE 5.—*Corn: Geographic differences in values and costs of production*—Con.

PER ACRE—Continued.

State and geographic divisions.	Average gross returns, 1911–1915 (price per bushel × yield).	Cost of production, 1909.			Ratio of cost to gross returns (cost = 100 per cent).	Value of by-products, 1909.	Comparison of preceding differences in percentages of the United States average as base (100 per cent).		
		Cost, including land rental or interest.	Cost, excluding land rental or interest.	Commercial fertilizer in total cost.			Gross returns.	Cost, including land rental or interest.	Cost, excluding land rental or interest.
South Atlantic:	*Per acre*	*Per acre*	*Per acre*	*Per acre*	*Per cent*	*Per acre*	*Per cent*	*Per cent*	*Per cent*
Delaware	$19.47	$16.54	$13.04	$2.75	118	$4.00	125	135	153
Maryland	22.32	15.36	12.23	2.03	145	3.34	143	125	144
Virginia	18.50	13.90	10.87	1.86	133	2.20	118	113	128
West Virginia	23.56	16.21	12.98	1.14	146	2.04	151	132	152
North Carolina	15.77	15.13	11.66	2.40	104	1.98	101	123	137
South Carolina	16.20	15.83	12.56	4.48	102	2.74	104	129	147
Georgia	12.60	13.26	10.18	2.44	95	1.90	81	108	119
Florida	11.85	12.01	10.21	2.34	98	.53	76	98	120
East North Central:									
Ohio	22.80	15.41	11.09	.99	148	2.39	146	126	130
Indiana	19.61	13.80	8.78	.74	142	1.09	126	112	103
Illinois	18.15	13.25	7.59	.31	137	.67	116	108	89
Michigan	22.10	16.05	12.52	.66	138	3.85	142	131	147
Wisconsin	21.35	14.48	10.73	.36	147	3.14	137	118	126
West North Central:									
Minnesota	16.83	12.04	9.23	.60	140	1.52	108	98	108
Iowa	17.85	12.39	7.76	.21	145	.80	114	101	91
Missouri	15.25	10.45	6.81	.24	146	.62	98	85	80
North Dakota	13.44	9.71	7.63	.27	138	2.02	86	79	90
South Dakota	13.23	9.91	7.05	.31	133	.68	85	81	83
Nebraska	11.73	10.01	6.33	.16	117	.41	75	82	74
Kansas	10.62	9.16	5.74	.04	116	.55	68	75	67
East South Central:									
Kentucky	16.38	12.81	8.83	.77	128	.91	105	104	104
Tennessee	16.25	12.41	8.86	.63	130	.80	104	101	104
Alabama	13.43	13.59	11.04	2.65	99	1.44	86	111	130
Mississippi	13.68	12.52	9.62	1.50	109	1.50	88	102	113
West South Central:									
Louisiana	14.20	12.24	9.28	1.29	116	1.53	91	100	109
Texas	14.40	10.29	7.05	.40	140	.55	92	84	83
Oklahoma	9.44	8.59	5.80	.01	110	.26	61	70	68
Arkansas	14.40	12.01	8.59	.61	120	1.27	92	98	101
Mountain:									
Montana	20.72	.....	.....	.....	.....	.....	133	.....	.....
Wyoming	16.33	9.95	7.08	.06	164	2.00	105	81	83
Colorado	11.97	8.97	6.39	.07	133	1.06	77	73	75
New Mexico	18.48	11.30	8.24	.00	164	2.04	118	92	97
Arizona	33.48	.....	.....	.....	.....	.....	215	.....	.....
Utah	25.84	.....	.....	.....	.....	.....	166	.....	.....
Nevada	33.66	.....	.....	.....	.....	.....	216	.....	.....
Idaho	23.04	13.73	9.86	.33	168	2.10	148	112	116
Pacific:									
Washington	21.56	11.92	8.57	.72	180	4.55	138	97	101
Oregon	24.18	13.19	9.09	.28	182	3.50	155	107	107
California	32.56	18.82	12.87	.00	173	1.28	209	153	151
United States	15.60	12.27	8.52	.82	127	1.20	100	100	100

TABLE 5A.—*Corn: Geographic differences in farm prices and costs of production.*

PER BUSHEL.

State and geographic divisions.	Bushels produced per acre (average, 1911–1915).	Farm price (average 1911–1915).	Cost of production.[1]		Ratio of cost to price (cost = 100 per cent).	Comparisons in percentages of the United States average as base (100 per cent).			
			Including land rental or interest.	Excluding land rental or interest.		Bushels per acre.	Farm price.	Cost of production.	
								Including land rental or interest.	Excluding land rental or interest.
	Bushels.	*Cents per bushel.*	*Cents per bushel.*	*Cents per bushel.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
United States	**26**	**60**	**47**	**33**	**127**	**100**	**100**	**100**	**100**
New England	44	84	70	63	120	169	140	148	192
Middle Atlantic	39	73	53	43	138	150	122	112	131
South Atlantic	24	76	61	49	124	92	127	129	150
East North Central	36	58	41	28	143	138	97	87	85
West North Central	26	54	41	28	133	100	90	87	85
East South Central	22	70	58	44	120	85	117	123	134
West South Central	19	68	57	40	120	73	113	119	122
Mountain	28	80	39	28	204	108	133	83	85
Pacific	32	81	46	32	177	123	135	97	98
New England:									
Maine	42	85	88	82	96	162	142	186	250
New Hampshire	44	79	70	63	113	169	132	148	192
Vermont	42	80	66	58	121	162	133	140	177
Massachusetts	45	82	65	57	127	173	137	138	174
Rhode Island	42	96	67	60	143	162	160	142	183
Connecticut	47	84	71	63	119	181	140	150	192
Middle Atlantic:									
New York	37	78	59	49	132	142	130	125	150
New Jersey	38	73	58	47	126	146	122	123	143
Pennsylvania	41	69	44	35	157	158	115	93	107
South Atlantic:									
Delaware	33	59	50	40	118	127	98	106	122
Maryland	36	62	43	34	145	138	103	91	104
Virginia	25	74	56	43	133	96	123	119	131
West Virginia	31	76	52	42	146	119	127	110	128
North Carolina	19	83	80	61	104	73	138	170	186
South Carolina	18	90	88	70	102	69	150	186	214
Georgia	15	84	88	68	95	58	140	186	208
Florida	15	79	80	68	98	58	132	170	208
East North Central:									
Ohio	40	57	39	28	148	154	95	83	85
Indiana	37	53	37	24	142	142	88	78	73
Illinois	33	55	40	23	137	127	92	85	70
Michigan	34	65	47	37	138	131	108	100	113
Wisconsin	35	61	41	31	147	135	102	87	95
West North Central:									
Minnesota	33	51	36	28	140	127	85	76	85
Iowa	35	51	35	22	145	135	85	74	67
Missouri	25	61	42	27	146	96	102	89	82
North Dakota	24	56	40	32	138	92	93	85	98
South Dakota	27	49	37	26	133	104	82	78	79
Nebraska	23	51	44	28	117	88	85	93	85
Kansas	18	59	51	32	116	69	98	108	98
East South Central:									
Kentucky	26	63	49	34	128	100	105	104	104
Tennessee	25	65	50	35	130	96	108	106	107
Alabama	17	79	80	65	99	65	132	170	198
Mississippi	19	72	66	51	109	73	120	140	156
West South Central:									
Louisiana	20	71	61	46	116	77	118	129	140
Texas	20	72	51	35	140	77	120	108	107
Oklahoma	16	59	54	36	110	62	98	114	110
Arkansas	20	72	60	43	120	77	120	127	131

[1] Costs per bushel obtained by dividing costs per acre (see Table 5) by average yield per acre, 1911–1915. Figures for cost per acre are comparatively stable.

TABLE 5A.—*Corn: Geographic differences in farm prices and costs of production*—Continued.

PER BUSHEL—Continued.

State and geographic divisions.	Bushels produced per acre (average, 1911–1915).	Farm price (average, 1911–1915).	Cost of production.		Ratio of cost to price (cost = 100 per cent).	Comparisons in percentages of the United States average as base (100 per cent).			
			Including land rental or interest.	Excluding land rental or interest.		Bushels per acre.	Farm price.	Cost of production.	
								Including land rental or interest.	Excluding land rental or interest.
	Bushels.	*Cents per bushel.*	*Cents per bushel.*	*Cents per bushel.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Mountain:									
Montana	28	74	.....	.....	.....	108	123	.....	.....
Wyoming	23	71	43	31	164	88	119	91	95
Colorado	19	63	47	34	133	73	105	100	104
New Mexico	24	77	47	34	164	92	128	100	104
Arizona	31	108	.....	.....	.....	119	180	.....	.....
Utah	34	76	.....	.....	.....	131	127	.....	.....
Nevada	33	102	.....	.....	.....	127	170	.....	.....
Idaho	32	72	43	31	168	123	120	91	95
Pacific:									
Washington	28	77	43	31	180	108	128	91	95
Oregon	31	78	43	29	182	119	130	91	88
California	37	88	51	35	173	142	147	108	107
United States	26	60	47	33	127	100	100	100	100

CHARACTERISTICS OF PRICE ZONES.

A brief explanation of the characteristics of the apparent differences seems necessary to avoid error in the practical application of the detailed figures of the farm prices of corn by States and counties.

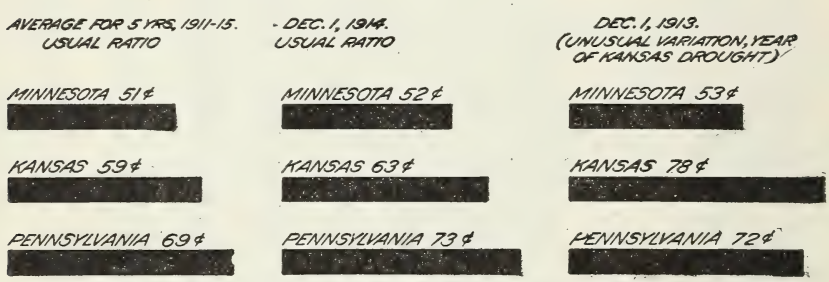


FIG. 5.—Showing usual geographic difference in farm prices of corn, and variation therefrom.

To determine normal conditions the data forming the base of the maps were arranged and zones determined according to the five-year averages (1910–1914). Prices in a single year, of course, may be greater or less than the average. Unusual harvest or market circum-

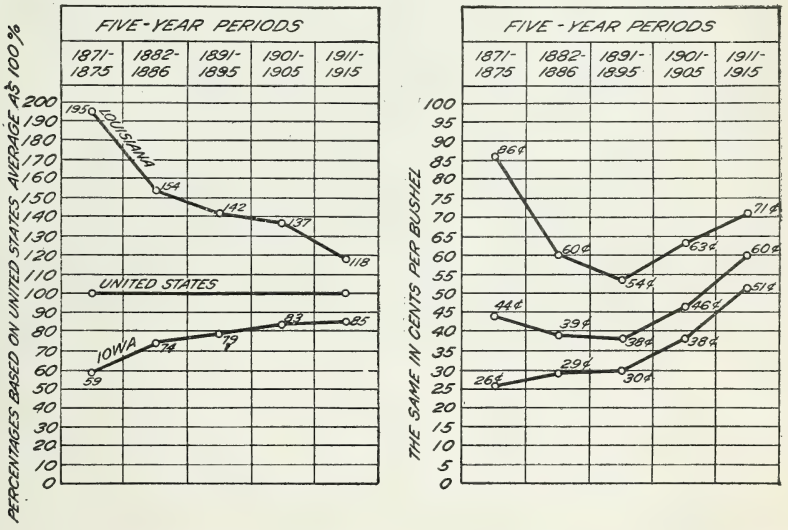
stances which alter the ordinary course of the corn trade may alter price ratios between two localities. The quality of the local corn crop may be poor, or a local failure may occur and a territory usually producing a surplus may have to ship in corn.

As an instance in point: Kansas, usually a corn-exporting State, had to import large quantities of corn on account of the State's crop failure in 1913. The relatively high freight rates on corn into Kansas added to the disadvantage caused by the crop failure. Kansas corn prices, usually only a few cents higher than those of Minnesota, in that year averaged 25 cents per bushel higher; they were even higher than those of Pennsylvania—far to the east and usually on a considerably higher level.

RETROSPECTIVE VIEW OF PRICES AND PRICE FACTORS, 1871–1915.

TREND OF FARM PRICES.

A review of the trend of geographic differences in farm prices of corn for a series of years reflects sharply economic transformations within the United States, and particularly reduced costs of transportation and marketing. It also indicates present tendencies. Table 8 shows the trend of farm prices of corn and the sectional variations therein from 1871 to 1915. An average of five years was



	1871-1875	1882-1886	1891-1895	1901-1905	1911-1915
LOUISIANA	195	154	142	137	118
IOWA	59	74	79	83	85
DIFFERENCE	136	80	63	54	33

	1871-1875	1882-1886	1891-1895	1901-1905	1911-1915
	86¢	60¢	54¢	63¢	71¢
	26¢	29¢	30¢	38¢	51¢
	60¢	31¢	24¢	25¢	20¢

FIG. 6.—Illustrating trend of geographic differences in farm prices of corn, 1871–1915. Iowa: Example of corn-surplus State; Louisiana: Example of corn-deficiency State.

employed to show predominant conditions at each period. Units of measurement are averages for States and geographic divisions.

Extreme price differences are indicated at the opening period, when farmers in some corn-deficiency States received fully four times as much for their corn as in certain surplus-producing States. Such price differences have narrowed notably, and only by including insignificant quantities raised in Nevada and Arizona can even 100 per cent variation be found between two States. The geographic differences have been cut in two.

The minimum price has moved north and west; in 1871–1875 it appeared in Iowa, in 1882–1886 in Nebraska, and in 1911–1915 in South Dakota.

The general level of corn prices, that is, the average farm price for the United States, at first declined, reaching its lowest in 1891–1895, then rose to higher levels. But in the corn belt prices rose steadily throughout the whole period; in some cases they were doubled. In the corn-deficiency States a contrary tendency is evidenced; farm prices have fallen away in the States most highly deficient, as in New England and the far South; in others they have remained stationary, or have increased, as in the Middle Atlantic section and the northern tier of the Southern States, but in far less ratio than in the exporting or corn-surplus States.

The trend of geographic prices may be more clearly seen in the percentages; these are based upon the United States average as 100 for each period, to reduce the figures to a comparable standard. The price percentage in corn-deficiency States (the percentage of the United States average) has declined rapidly, but in the corn-exporting States it has risen steadily. Prices of corn in Iowa and Louisiana have been plotted on figure 6. The difference in favor of the Louisiana grower at the beginning was 60 cents per bushel; at the latter period 20 cents. The Louisiana price declined from 86 cents to 71 cents, and the State's percentage of the United States average from 195 to 118, while the Iowa price rose from 26 cents to 51 cents, and the price percentage from 59 to 85.

TABLE 6.—*Corn: Review of farm prices, 1871–1915, by States and sections, showing geographic trend in the price differences.*

State and geographic division.	Farm prices, per bushel, in five-year averages.					Measurement of tendencies in percentages of the United States average as base.				
	1911–1915	1901–1905	1891–1895	1882–1886[1]	1871–1875[2]	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875
United States	*Cts.* **60**	*Cts.* **46**	*Cts.* **38**	*Cts.* **39**	*Cts.* **44**	*Per ct.* **100**	*Per ct.* **100**	*Per ct.* **100**	*Per ct.* **100**	*Per ct.* **100**
New England	84	72	65	77	87	140	157	171	197	198
Middle Atlantic	73	60	54	61	64	122	131	142	156	145
South Atlantic	76	63	52	58	67	127	137	137	149	152
East North Central	58	45	38	40	40	97	98	100	103	91
West North Central	54	39	33	31	33	90	85	87	79	75
East South Central	70	57	45	51	85	117	124	118	130	193
West South Central	68	56	48	56	74	113	122	126	143	168
Mountain	80	71	65	79	.....	133	154	171	203	.....
Pacific	81	66	57	74	94	135	144	150	190	213
New England:										
Maine	85	73	67	77	88	142	159	176	197	200
New Hampshire	79	71	65	79	87	132	154	171	203	198
Vermont	80	69	64	74	84	133	150	168	190	191
Massachusetts	82	72	63	77	85	137	156	166	197	193
Rhode Island	96	78	68	79	88	160	170	179	203	200
Connecticut	84	72	64	74	91	140	157	168	190	207
Middle Atlantic:										
New York	78	65	57	65	70	130	141	150	167	159
New Jersey	73	58	54	60	62	122	126	142	154	141
Pennsylvania	69	58	51	57	59	115	126	134	146	134
South Atlantic:										
Delaware	59	50	44	47	53	98	109	116	120	120
Maryland	62	52	46	49	57	103	113	121	126	130
Virginia	74	55	47	52	54	123	120	124	133	123
West Virginia	76	60	52	50	52	127	130	137	128	118
North Carolina	83	64	49	58	59	138	139	129	149	134
South Carolina	90	73	60	65	86	150	159	158	167	195
Georgia	84	73	56	64	79	140	159	147	164	180
Florida	79	75	65	77	98	132	163	171	197	223
East North Central:										
Ohio	57	47	39	43	40	95	102	103	110	91
Indiana	53	41	35	37	35	88	89	92	95	80
Illinois	55	41	33	35	32	92	89	87	90	73
Michigan	65	50	44	45	49	108	109	116	115	111
Wisconsin	61	47	38	41	44	102	102	100	105	100
West North Central:										
Minnesota	51	38	35	37	39	85	83	92	95	89
Iowa	51	38	30	29	26	85	83	79	74	59
Missouri	61	43	33	31	36	102	93	87	80	82
North Dakota	56	42	37	38	.....	93	91	97	97	.....
South Dakota	49	38	32		.....	82	83	84		.....
Nebraska	51	35	30	23	29	85	76	79	59	66
Kansas	59	41	32	27	35	98	89	84	69	80
East South Central:										
Kentucky	63	50	39	41	40	105	109	103	105	91
Tennessee	65	52	38	42	48	108	113	100	108	109
Alabama	79	65	53	60	76	132	141	139	154	173
Mississippi	72	62	50	59	80	120	135	132	151	182
West South Central:										
Louisiana	71	63	54	60	86	118	137	142	154	195
Texas	72	59	48	57	70	120	128	126	146	159
Oklahoma	59	45	.....	.....	.....	98	98	.....	.....	.....
Arkansas	72	58	43	50	66	120	126	113	128	150
Mountain:										
Montana	74	72	74	93	.....	123	157	195	238	.....
Wyoming	71	64	62	.....	.....	119	139	163	.....	.....
Colorado	63	58	49	72	.....	105	126	129	185	.....
New Mexico	77	75	69	82	.....	128	163	182	210	.....
Arizona	108	94	76	.....	.....	180	204	200	.....	.....
Utah	76	74	57	74	.....	127	161	150	190	.....
Nevada	102	.....	.....	70	.....	170	.....	.....	179	.....
Idaho	72	63	65	84	.....	120	137	171	215	.....
Pacific:										
Washington	77	61	58	78	.....	128	133	153	200	.....
Oregon	78	62	57	72	88	130	135	150	185	200
California	88	75	57	72	99	147	163	150	185	225

[1] Five-year average 1882–1886 used, because of availability of statistics for a larger number of States beginning 1882.
[2] Values reduced to gold basis.

Prices are based upon shelled corn, at 56 pounds per bushel.

THE DISPARITY IN PRICES OF CORN, WHEAT, AND OATS DECREASING.

As the price of one cereal affects that of the others to a considerable degree, their relationship is suggestive. The difference between corn and wheat prices has been steadily diminishing. At the beginning (1871–1875) the average farm price of wheat in the United States on December 1 was 58 cents more than that of corn (wheat $1.02, corn 44 cents); at the end only 27 cents (wheat 87 cents, corn 60

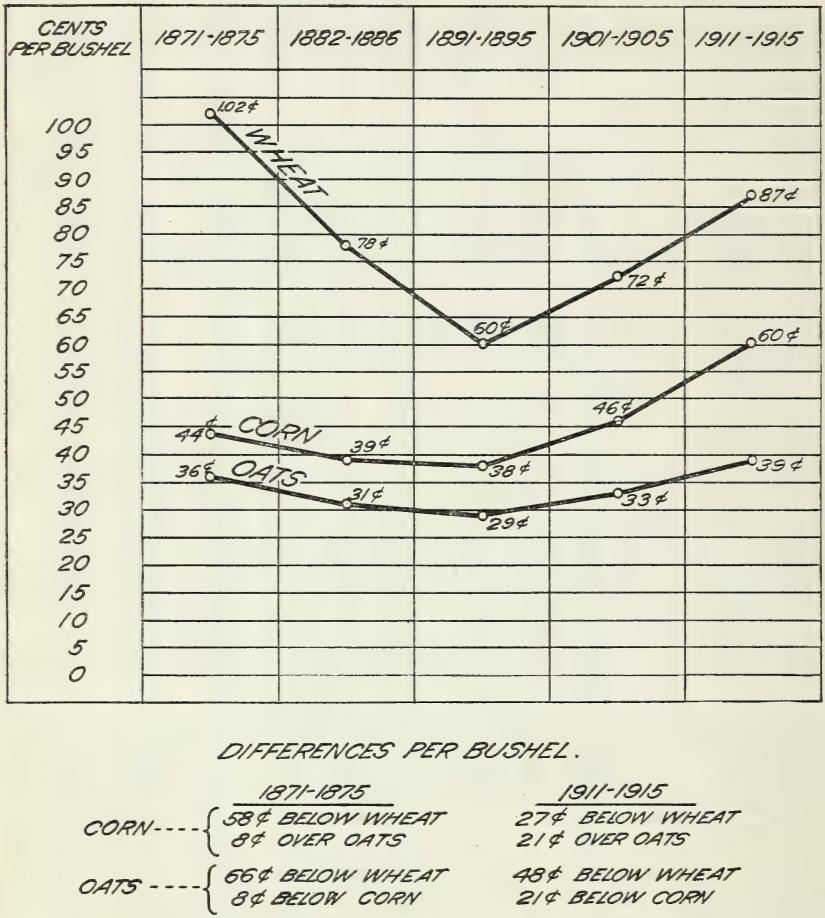


FIG. 7.—Course of farm prices of wheat, corn, and oats, showing lessening differences.

cents), the average wheat price dropping from two and one-third times that of corn to only about one and one-half times. But as the price of oats has not increased as rapidly, the disparity between corn and oats has increased, between wheat and oats has narrowed; wheat has dropped from about three times the price of oats to a little over twice its level.

Another element which should be taken into consideration is the larger yield in bushels to the acre of corn and oats compared with wheat.

Figure 7 refers to the general level (the average for the United States). When the trend of farm prices of corn, wheat, and oats is compared for each State or section, it appears that in some the tendency pointed out is more marked, in others less so, and in still others a contrary trend appears. In Virginia the difference between wheat and corn prices dropped from 68 cents (1871–1875) to 28 cents (1911–1915). On the other hand, in South Dakota wheat was but 18 cents higher than corn in 1891–1895, and in 1911–1915 the difference increased to 33 cents per bushel.

TREND OF YIELDS TO THE ACRE.

The trend of yields, which must be taken into consideration as qualifying price conditions, is given in Table 7 in absolute and relative figures. Changes can best be followed in the percentages.

The average yield for the United States (number of bushels produced to the acre) has remained about stationary during the half century under review. While increasing yields are shown in by far the greater number of States, a decided decline is in evidence in most of the great corn States. As the latter produce the greater part of the national crop, they have a strong depressing effect on the weighted general average.

Most pronounced advances in yields to the acre are shown in the two divisions comprising the North Atlantic States. While yields lower than in other sections still prevail in the Southern States, more especially in those farthest south, it is in the latter that the increases are most notable.

The important exception to the general tendency toward larger yields appears in the newer States, particularly in the great corn States west of the Mississippi. Here a more or less decided decline is in evidence. Details follow.

TABLE 7.—*Corn: Trend of yields per acre, 1871 to 1915, and geographic comparisons.*

[Natural limitations, reflected in yields per acre, as qualifying price factors.]

States and geographic divisions.	Yields to the acre, in 5-year averages.					Measurement of changes in percentages of the United States average as base (100 per cent).				
	1911–1915.	1901–1905.	1891–1895.	1882–1886.	1871–1875.	1911–1915.	1901–1905.	1891–1895.	1882–1886.	1871–1875.
United States	*Bush.* **26**	*Bush.* **25**	*Bush.* **24**	*Bush.* **24**	*Bush.* **27**	*P. ct.* **100**	*P. ct.* **100**	*P. ct.* **100**	*P. ct.* **100**	*P. ct.* **100**
New England	44	32	36	32	32	168	129	149	131	119
Middle Atlantic	39	32	32	30	36	149	129	132	124	133
South Atlantic	24	19	16	15	18	92	78	69	63	65
East North Central	36	32	29	29	32	138	129	119	120	120
West North Central	26	26	24	30	33	102	105	99	124	122
East South Central	22	19	19	18	20	84	75	79	75	75
West South Central	19	18	19	18	20	73	74	78	75	73
Mountain	28	25	22	23	.....	108	98	93	98	.....
Pacific	32	26	25	26	32	123	103	104	108	120
New England:										
Maine	42	33	37	33	28	162	132	154	138	104
New Hampshire	44	29	36	32	37	169	116	150	133	137
Vermont	42	31	39	33	36	162	124	162	138	133
Massachusetts	45	34	38	31	34	173	136	158	129	126
Rhode Island	42	31	31	30	28	162	124	129	125	104
Connecticut	47	35	34	30	30	181	140	142	125	111
Middle Atlantic:										
New York	37	28	32	29	33	142	112	133	121	122
New Jersey	38	34	32	30	38	146	136	133	125	141
Pennsylvania	41	35	31	30	37	158	140	129	125	137
South Atlantic:										
Delaware	33	29	22	18	21	127	116	92	75	78
Maryland	36	33	24	23	24	138	132	100	96	89
Virginia	25	23	18	16	21	96	92	75	67	78
West Virginia	31	25	23	23	28	119	100	96	96	104
North Carolina	19	14	13	12	15	73	56	54	50	56
South Carolina	18	10	10	9	10	69	40	42	38	37
Georgia	15	11	12	11	11	58	44	50	46	41
Florida	15	10	10	9	10	58	40	42	38	37
East North Central:										
Ohio	40	33	29	31	37	154	132	121	129	137
Indiana	37	33	30	31	32	142	132	125	129	119
Illinois	33	34	30	27	30	127	136	125	112	111
Michigan	34	31	27	29	32	131	124	112	121	119
Wisconsin	35	30	27	26	31	135	120	112	108	115
West North Central:										
Minnesota	33	27	26	29	33	127	108	108	121	122
Iowa	35	30	30	28	35	135	120	125	117	130
Missouri	25	28	29	29	30	96	112	121	121	111
North Dakota	24	23	20	25	.....	92	92	83	104	.....
South Dakota	27	25	17			104	100	71		
Nebraska	23	28	22	35	33	88	112	92	146	122
Kansas	18	22	22	32	34	69	88	92	133	126
East South Central:										
Kentucky	26	25	26	24	29	100	100	108	100	107
Tennessee	25	22	22	21	22	96	88	92	88	81
Alabama	17	13	13	13	14	65	52	54	54	52
Mississippi	19	15	15	14	16	73	60	62	58	59
West South Central:										
Louisiana	20	16	16	16	16	77	64	67	67	59
Texas	20	18	21	18	20	77	72	88	75	74
Oklahoma	16	22	.....	.....	.....	62	88	.....	.....	.....
Arkansas	20	18	19	20	23	77	72	79	83	85
Mountain:										
Montana	28	23	26	26	.....	108	92	108	108	.....
Wyoming	23	28	24	.....	.....	88	112	100	.....	.....
Colorado	19	20	20	28	.....	73	80	83	117	.....
New Mexico	24	25	22	20	.....	92	100	92	83	.....
Arizona	31	22	20	21	.....	119	88	83	88	.....
Utah	34	26	21	23	.....	131	104	88	96	.....
Nevada	33	.....	.....	24	.....	127	.....	.....	100	.....
Idaho	32	28	24	22	.....	123	112	100	92	.....
Pacific:										
Washington	28	22	19	26	.....	108	88	79	108	.....
Oregon	31	24	25	25	28	119	96	104	104	104
California	37	31	31	27	37	142	124	129	112	137

TREND OF GROSS RETURNS TO THE ACRE.

The correlation between geographic differences in price per bushel and the number of bushels grown to the acre has been developed in table 8.

It has been seen that cheapening transportation and marketing costs have reduced greatly the price advantage of corn growers in States of insufficient production, but that a corresponding increase has taken place in the surplus-producing States. It was pointed out, on the other hand, that in the latter, yields to the acre have generally remained stationary or declined, although a marked improvement in yields is shown in the deficiency States.

In combining these two elements it appears that the general average of gross money values to the acre (price × yield) has increased, and so also have the figures for each State—some slightly, others greatly; but that, in relation to the mounting United States average, either steadily dwindling or rising ratios are shown.

Comparing the progress of the States producing insufficient corn for their needs with the advances in the United States average, the South Atlantic division alone shows an increasing ratio of returns to the acre; the North Atlantic and East South Central divisions are about stationary compared to the general level, and the Mountain and Pacific sections show a notable and steady decline in such a comparison.

With respect to the two surplus-producing divisions, the East North Central States show a marked improvement in relative advantage as seen in the percentage column, but the West North Central States (with the single exception of Iowa) show declines more or less pronounced. Kansas, for instance, dropped from 100 per cent to 68 per cent of the United States average.

TABLE 8.—*Corn: Gross returns per acre (yield per acre × price per bushel).*

[A review, by States, of the trend of returns per acre of corn, 1871 to 1915.]

States and geographic divisions.	Gross returns per acre.					Measurement of changes in percentages of the average for the United States as base (100).				
	1911–1915.	1901–1905.	1891–1895.	1882–1886.	1871–1875.	1911–1915.	1901–1905.	1891–1895.	1882–1886.	1871–1875.
United States	*Dolls.* **15.60**	*Dolls.* **11.50**	*Dolls.* **9.12**	*Dolls.* **9.36**	*Dolls.* **11.88**	*P. ct.* **100**	*P. ct.* **100**	*P. ct.* **100**	*P. ct.* **100**	*P. ct.* **100**
New England	36.96	23.04	23.40	24.64	27.84	237	200	257	263	234
Middle Atlantic	28.47	19.20	17.28	18.30	23.04	182	167	189	196	194
South Atlantic	18.24	11.97	8.32	8.70	12.06	117	104	91	93	102
East North Central	20.88	14.40	11.02	11.60	12.80	134	125	121	124	108
West North Central	14.04	10.14	7.92	9.30	10.89	90	88	87	99	92
East South Central	15.40	10.83	8.55	9.18	17.00	99	94	94	98	143
West South Central	12.92	10.08	9.12	10.08	14.80	83	88	100	108	125
Mountain	22.40	17.75	14.30	18.17	.....	144	154	157	194	.....
Pacific	25.92	17.16	14.25	19.24	30.08	166	149	156	206	253
New England:										
Maine	35.70	24.09	24.79	25.41	24.64	229	209	272	271	207
New Hampshire	34.76	20.59	23.40	25.28	32.19	223	179	257	270	271
Vermont	33.60	21.39	24.96	24.42	30.24	215	186	274	261	255
Massachusetts	36.90	24.48	23.94	23.87	28.90	237	213	263	255	243
Rhode Island	40.32	24.18	21.08	23.70	24.64	258	210	231	253	207
Connecticut	39.48	25.20	21.76	22.20	27.30	253	219	239	237	230
Middle Atlantic:										
New York	28.86	18.20	18.24	18.85	23.10	185	158	200	201	194
New Jersey	27.74	19.72	17.28	18.00	23.56	178	171	189	192	198
Pennsylvania	28.29	20.30	15.81	17.10	21.83	181	177	173	183	184
South Atlantic:										
Delaware	19.47	14.50	9.68	8.46	11.13	125	126	106	90	94
Maryland	22.32	17.16	11.04	11.27	13.68	143	149	121	120	115
Virginia	18.50	12.65	8.46	8.32	11.34	118	110	93	89	95
West Virginia	23.56	15.00	11.96	11.50	14.56	151	130	131	123	123
North Carolina	15.77	8.96	6.37	6.96	8.85	101	78	70	74	74
South Carolina	16.20	7.30	6.00	5.85	8.60	104	63	66	62	72
Georgia	12.60	8.03	6.72	7.04	8.69	81	70	74	75	73
Florida	11.85	7.50	6.50	6.93	9.80	76	65	71	74	82
East North Central:										
Ohio	22.80	15.51	11.31	13.33	14.80	146	135	124	142	125
Indiana	19.61	13.53	10.50	11.47	11.20	126	118	115	123	94
Illinois	18.15	13.94	9.90	9.45	9.60	116	121	109	101	81
Michigan	22.10	15.50	11.88	13.05	15.68	142	135	130	139	132
Wisconsin	21.35	14.10	10.26	10.66	13.64	137	123	113	114	115
West North Central:										
Minnesota	16.83	10.26	9.10	10.73	12.87	108	89	100	115	108
Iowa	17.85	11.40	9.00	8.12	9.10	114	99	99	87	77
Missouri	15.25	12.04	9.57	8.99	10.80	98	105	105	96	91
North Dakota	13.44	9.66	7.40	} 9.50	.....	{ 86	84	81	} 101	.....
South Dakota	13.23	9.50	5.44			{ 85	83	60		
Nebraska	11.73	9.80	6.60	8.05	9.57	75	85	72	86	81
Kansas	10.62	9.02	7.04	8.64	11.90	68	78	77	92	100
East South Central:										
Kentucky	16.38	12.50	10.14	9.84	11.60	105	109	111	105	98
Tennessee	16.25	11.44	8.36	8.82	10.56	104	99	92	94	89
Alabama	13.43	8.45	6.89	7.80	10.64	86	73	76	83	90
Mississippi	13.68	9.30	7.50	8.26	12.80	88	81	82	88	108
West South Central:										
Louisiana	14.20	10.08	8.64	9.60	13.76	91	88	95	103	116
Texas	14.40	10.62	10.08	10.26	14.00	92	92	111	110	118
Oklahoma	9.44	9.90	.....	.....	.....	61	86	.....	.....	.....
Arkansas	14.40	10.44	8.17	10.00	15.18	92	91	90	107	128
Mountain:										
Montana	20.72	16.56	19.24	24.18	.....	133	144	211	258	.....
Wyoming	16.33	17.92	14.88	.....	.....	105	156	163	.....	.....
Colorado	11.97	11.60	9.80	20.16	.....	77	101	107	215	.....
New Mexico	18.48	18.75	15.18	16.40	.....	118	163	166	175	.....
Arizona	33.48	20.68	15.20	.....	.....	215	180	167	.....	.....
Utah	25.84	19.24	11.97	17.02	.....	166	167	131	182	.....
Nevada	33.66	.....	.....	16.80	.....	216	.....	.....	179	.....
Idaho	23.04	17.64	15.60	18.48	.....	148	153	171	197	.....
Pacific:										
Washington	21.56	13.42	11.02	20.28	.....	138	117	121	217	.....
Oregon	24.18	14.88	14.25	18.00	24.64	155	129	156	192	207
California	32.56	23.25	17.67	19.44	36.63	209	202	194	208	308

GEOGRAPHIC CHANGES IN SOURCES OF CORN SUPPLY AND OTHER PRICE FACTORS.

In conclusion, a statistical review from 1871 to 1915 is appended in Table 9, showing geographic changes in sources of the domestic corn supply, relation of production to population, and other factors.

Since 1871–1875 corn production has nearly trebled, but the fraction as well as quantity of corn exported has declined, likewise the percentage of shipments out of counties where grown. Consequently, the farm consumption has increased. Per capita production, however, has declined since 1882–1886 (31 bushels per capita against 28.5 in 1911–1915).

Notwithstanding the fact that the average production has increased from about 1 billion bushels at the first period to $2\frac{3}{4}$ billions at the last, the percentage of corn in the total improved land has fallen off. Increased crops are due to new areas which have been brought under cultivation rather than to an increased proportion of farm land devoted to corn.

Of the two corn-surplus divisions, the West North Central section has nearly quadrupled its production, while the crop of the East North Central States has less than doubled. The fraction of the national crop produced in the East North Central States has dropped from 38.8 per cent in 1871–1875 to 28.7 per cent in 1911–1915, while in the West North Central part in the same periods it has risen from 25.2 per cent to 35.9 per cent. A similar reversal obtains in hog production, which absorbs the largest quantity of corn in these two divisions. But, while the per cent of the total improved land occupied by corn has increased slightly in the older section, it has declined notably in the newer or western half. Moreover, in proportion to population (per capita production) in the more recent periods diminishing ratios are shown.

By far the highest percentage of increased production is shown in the Mountain States, wherein production has increased 347 per cent in the last decade (although per capita production has risen only from 2 bushels to 4.6 bushels). Secondary only to those of this section are the increased crops in the corn-deficiency States farthest to the south and north; on the south from South Carolina to Louisiana, and on the north from Washington to the Dakotas.

TABLE 9.—*Corn: A statistical review, from 1871 to 1915, by States and geographic divisions, showing changes in domestic sources of corn supply, in absolute and relative figures, trend of per capita production, and per cent of improved land in corn.*

State and geographic division.	Geographic distribution of corn production—in five-year averages.					Average 1911–1915 ascompared with 1901–1905 (100 per cent).	Ratio of corn production to population.[1]					Distribution of corn production, in percentages of the United States totals.					Per cent of all improved land occupied by corn.[2]			
	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875		1911–1915	1901–1905	1891–1895	1882–1886	1871–1875	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875	1909	1899	1889	1879
	Thousand bushels.					*Per cent.*	*Number of bushels per capita.*					*Per cent.*					*Per cent.*			
United States	2,766,112	2,293,164	1,734,468	1,713,047	1,037,622	121	28.5	28.4	25.9	31.0	24.7	100.0	100.0	100.0	100.0	100.0	20.6	22.9	20.2	21.9
New England	9,059	6,764	7,043	8,136	7,613	134	1.3	1.2	1.4	1.9	2.1	0.3	0.3	0.4	0.5	0.7	2.5	2.4	1.5	1.8
Middle Atlantic	91,522	78,145	67,022	73,798	68,615	117	4.4	4.7	5.0	6.5	7.4	3.3	3.4	3.9	4.3	6.6	7.4	7.9	6.4	7.5
South Atlantic	263,312	191,384	159,028	143,646	100,232	138	20.6	17.4	17.0	17.7	15.7	9.5	8.3	9.2	8.4	9.7	23.5	26.1	23.1	26.8
East North Central	791,838	645,200	437,952	481,211	402,855	123	41.9	38.7	30.8	39.7	41.3	28.7	28.1	25.2	28.1	38.8	24.6	24.9	21.3	23.7
West North Central	992,756	900,726	709,528	674,864	261,115	110	82.3	83.9	75.8	92.9	57.4	35.9	39.3	40.9	39.4	25.2	21.9	26.2	26.7	29.0
East South Central	298,611	217,989	213,030	207,983	143,677	137	34.4	27.9	31.5	35.1	30.2	10.9	9.5	12.3	12.1	13.9	25.8	29.1	26.8	31.0
West South Central	298,651	246,615	134,130	117,430	50,665	121	31.4	34.2	25.4	30.1	20.9	10.8	10.8	7.7	6.9	4.9	25.6	28.1	18.3	23.8
Mountain	13,632	3,928	3,563	2,116	13	347	4.6	2.0	2.6	2.4	.....	.5	.2	.2	.1	(3)	2.9	1.9	3.0	3.6
Pacific	3,731	2,413	3,172	3,863	1,490	155	.8	.8	1.6	2.7	1.8	.1	.1	.2	.2	.1	.4	.4	.5	.6
The Territories	.....	.....	.....	.....	1,347	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.1	.....	.....	.....	.....
New England:																				
Maine	686	445	623	1,005	1,051	154	.9	.6	.9	1.5	1.7	(3)	(3)	(3)	.1	.1	.6	.7	.4	.9
New Hampshire	973	812	1,008	1,238	1,368	120	2.2	1.9	2.6	3.4	4.2	(3)	(3)	.1	.1	.1	2.1	2.4	1.4	1.6
Vermont	1,944	1,821	1,841	1,957	1,759	107	5.4	5.2	5.5	5.9	5.3	.1	.1	.1	.1	.2	2.6	2.9	1.6	1.7
Massachusetts	2,137	1,516	1,657	1,820	1,476	141	.6	.5	.7	.9	.9	.1	.1	.1	.1	.1	3.6	3.0	2.1	2.5
Rhode Island	466	312	308	384	294	149	.8	.7	.8	1.3	1.3	(3)	(3)	(3)	(3)	(3)	5.4	4.3	2.8	4.0
Connecticut	2,853	1,858	1,606	1,732	1,665	154	2.4	1.9	2.0	2.6	3.0	.1	.1	.1	.1	.2	5.3	4.5	2.9	3.4
Middle Atlantic:																				
New York	20,388	17,736	17,324	21,250	18,193	115	2.1	2.3	2.7	3.9	4.0	.7	.8	1.0	1.2	1.7	3.5	4.2	3.0	4.4
New Jersey	10,495	9,463	9,374	10,256	10,428	111	3.8	4.6	5.9	8.2	10.7	.4	.4	.6	.6	1.0	14.7	14.9	13.4	16.4
Pennsylvania	60,639	50,946	40,324	42,292	39,994	119	7.5	7.6	7.2	9.0	10.7	2.2	2.2	2.3	2.5	3.9	10.9	11.2	9.5	10.2
South Atlantic:																				
Delaware	6,635	5,511	4,495	3,900	3,186	120	31.9	29.0	26.0	25.0	24.1	.2	.2	.2	.2	.3	26.5	25.5	22.9	27.1
Maryland	24,080	20,793	15,545	16,086	11,383	116	18.1	17.0	14.3	16.4	13.8	.9	.9	.9	1.0	1.1	19.3	18.7	17.2	19.9
Virginia	49,292	41,681	32,318	31,377	19,485	118	23.2	21.8	18.8	20.0	14.9	1.8	1.8	1.9	1.8	1.9	18.8	18.9	17.5	20.8
West Virginia	22,652	19,283	15,315	14,428	9,723	117	17.3	18.6	18.6	21.3	19.6	.8	.8	.9	.9	.9	12.2	13.2	13.0	14.9
North Carolina	55,534	37,032	32,463	29,373	22,061	150	24.1	18.6	19.1	19.8	18.9	2.0	1.6	1.9	1.7	2.1	27.9	32.7	30.2	35.6
South Carolina	35,493	18,433	17,291	13,511	9,824	193	22.6	13.2	14.3	12.8	12.4	1.3	.8	1.0	.8	1.0	25.7	30.7	25.6	31.5
Georgia	59,401	42,724	36,363	31,103	22,507	139	21.7	18.3	18.6	18.7	17.4	2.1	1.9	2.1	1.8	2.2	27.5	32.8	26.9	30.9
Florida	10,225	5,927	5,238	3,868	2,063	173	12.4	9.9	12.1	12.2	9.7	.4	.3	.3	.2	.2	33.6	37.7	33.1	38.0

East North Central:																				
Ohio	153,991	100,409	81,438	92,068	92,140	153	31.0	23.1	21.3	27.2	32.6	5.6	4.4	4.7	5.4	8.9	20.4	19.9	17.4	18.2
Indiana	180,926	146,439	106,130	111,730	80,442	124	65.5	56.9	46.4	54.1	45.4	6.5	6.4	6.1	6.5	7.8	28.9	27.0	23.7	26.4
Illinois	343,924	312,287	197,003	221,897	195,647	110	58.3	61.6	47.8	65.7	72.4	12.4	13.6	11.3	12.9	18.8	35.8	37.1	30.6	34.5
Michigan	57,226	40,742	26,300	26,871	16,711	140	19.5	16.1	12.0	14.8	12.7	2.1	1.8	1.5	1.6	1.6	12.4	12.7	10.1	11.1
Wisconsin	58,771	45,323	27,081	28,645	17,915	130	24.3	21.1	15.0	19.5	15.8	2.1	1.9	1.6	1.7	1.7	12.2	13.3	11.4	11.1
West North Central:																				
Minnesota	80,283	40,231	25,154	19,644	7,643	200	36.8	21.8	17.4	19.8	14.1	2.9	1.8	1.3	1.2	.7	10.2	7.8	8.1	6.1
Iowa	353,619	273,064	236,556	207,812	116,386	130	159.1	122.5	117.8	119.4	88.0	12.8	11.9	13.6	12.1	11.2	31.3	32.8	29.8	33.3
Missouri	186,643	177,665	173,596	174,022	87,605	105	55.6	56.2	61.8	73.3	47.2	6.7	7.8	10.0	10.2	8.5	28.9	32.4	30.7	33.4
North Dakota	10,121	1,933	523	10,933	.....	524	15.3	4.9	2.3	36.9	.....	.4	.1	[3]	.6	.....	.9	.6	.3	7.9
South Dakota	73,347	39,349	14,630			186	114.1	86.3	40.2			2.6	1.7	.8		.6	12.9	10.6	10.8	
Nebraska	167,928	211,707	124,323	108,282	10,663	79	136.2	191.8	117.0	.....	48.0	6.1	9.2	7.2	6.3	1.0	29.8	39.8	35.9	29.6
Kansas	120,815	156,777	134,746	154,171	38,818	77	68.5	102.0	93.5	131.9	70.1	4.4	6.8	7.8	9.0	3.8	27.1	33.0	32.8	31.8
East South Central:																				
Kentucky	96,623	80,785	76,288	80,982	56,908	120	41.4	36.9	39.2	46.8	40.1	3.5	3.5	4.4	4.7	5.5	23.9	24.2	25.0	28.2
Tennessee	84,599	70,319	71,734	70,813	45,055	120	37.8	34.0	38.9	43.4	33.5	3.1	3.1	4.1	4.1	4.4	28.9	32.9	29.8	34.2
Alabama	57,066	35,542	34,075	29,733	21,691	161	25.5	18.5	21.2	21.8	20.1	2.1	1.5	2.0	1.7	2.1	26.5	31.7	27.6	32.2
Mississippi	60,323	31,343	30,933	26,455	20,023	192	32.1	19.3	22.6	22.1	21.8	2.2	1.4	1.8	1.6	1.9	24.1	30.0	24.9	30.1
West South Central:																				
Louisiana	38,258	21,906	18,051	13,765	8,619	175	21.9	15.0	15.1	13.6	10.9	1.4	1.0	1.0	.8	.8	30.2	28.8	22.2	27.1
Texas	137,145	104,304	76,538	68,094	26,308	131	32.9	31.6	30.9	36.8	25.1	5.0	4.5	4.4	4.0	2.6	18.8	25.6	14.8	19.5
Oklahoma	72,983	[4] 79,560	.....	.....	.....	92	37.6	[4] 75.7	.....	.....	.....	2.6	[4] 3.5	.....	.....	.....	33.7	[4] 29.2	2.4	.....
Arkansas	50,265	40,845	39,541	35,571	15,738	123	30.3	29.4	33.4	38.1	27.1	1.8	1.8	2.3	2.1	1.5	28.2	33.3	30.1	36.1
Mountain:																				
Montana	1,077	83	31	19		1,298	2.6	.3	.2	.2		.1	[3]	[3]	[3]		.3	.2	.1	.1
Wyoming	441	62	53	.....		711	2.7	.6	.7	1.4		[3]	[3]	[3]	.....		.7	.2	.4	.....
Colorado	8,433	2,231	2,380	712	[5]	378	9.6	3.6	5.3	2.5	[5]	.3	.1	.1	[3]	[3]	7.6	3.7	6.5	3.7
New Mexico	2,257	940	691	959		240	6.1	4.0	4.0	7.1		.1			.1		5.9	12.6	10.8	17.5
Arizona	535	175	95	61		306	2.3	1.2	1.0	1.0			[3]	[3]			4.5	4.6	4.2	3.2
Utah	350	292	282	305		120	.9	1.0	1.2	1.8		[3]			[3]		.5	1.1	1.1	2.9
Nevada	33	.....	.....	21	13	.....	.3	.....	.....	.4	.3		.....	.....		[3]	.1	.1	[3]	.1
Idaho	506	145	31	39	[5]	349	1.3	.7	.3	.7	[5]		[3]	[3]		[3]	.3	.3	.2	.3
Pacific:																				
Washington	936	227	142	81	[5]	412	.7	.3	.4	.4	[5]	[3]	[3]	.....	[3]	[3]	.4	.3	.5	.4
Oregon	723	419	312	150	92	173	1.0	.9	.9	.6	.8			[3]	[3]	[3]	.4	.5	.3	.3
California	2,072	1,767	2,718	3,632	1,398	117	.8	1.0	2.1	3.6	2.1	.1	.1	.2	.2	.1	.5	.5	.6	.7
The Territories	.....	.....	.....	.....	1,347	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.1	.....	.....	.....	.....
United States	2,766,112	2,293,164	1,734,468	1,713,047	1,037,622	121	28.5	28.4	25.9	31.0	24.7	100.0	100.0	100.0	100.0	100.0	20.6	22.9	20.2	21.9
Domestic exports, including corn meal	38,774	74,615	63,980	49,398	38,561	52	.4	.9	1.0	.9	.9	1.4	3.3	3.7	2.9	3.7	.....	.....	.....	.....

[1] Five-year averages, production divided by population. Average population calculated by prorating differences between census periods.
[2] From the decennial census returns.
[3] Less than one-tenth of 1 per cent.
[4] Includes Indian Territory.
[5] Included in "The Territories."

SUMMARY.

Local types of agriculture are established by a combination of physical and commercial limitations. Yields to the acre may be said to reflect limitations of climate and soil; the farm or producers' price is a result of commercial factors which vary with each item of farm production in a section. Moreover, such factors are dynamic in character.

Extreme geographic variations prevail in the farm price of a product throughout the United States. Prices rise in the direction taken by the flow of a commodity from the regions of surplus to those of deficient production. A region of high prices for one product may have decidedly low prices for another. Such variations are usually consistent and may be illustrated in corn prices.

Lowest prices are paid to producers of corn in the corn belt, from eastern Nebraska to western Ohio. The minimum price is found in the northwestern corner of this section, in adjoining parts of Iowa, Minnesota, South Dakota, and Nebraska. This area of minimum price forms a depression, moving away from which prices attain constantly higher levels to all points of the compass. The degree of price increase is unequal; slowest across through the corn belt, but more pronounced when the eastern States are reached. Westward and northward, where areas of scant production are close at hand, and where corn moves in smaller volume, price levels rise rapidly. This is also true farther to the south. The maximum prices are found in the Southwest and Southeast, in the sections producing insufficient corn which are farthest from the corn belt.

Within the territory of low corn prices are comprised the areas of greatest corn and live-stock production. They contribute almost the entire gross corn supply of the country and substantially all the corn entering trade channels. The minimum price obtains in the part of the corn belt which is most disadvantageously located with regard to important markets. All other sections produce less than their requirements and must supplement local crops by shipments from the surplus-producing country.

Prices rise irregularly in the direction of this distributive movement, which is somewhat complex. The trade currents are influenced by the manifold uses of corn, conditions in foreign and domestic live stock and grain markets, and the flexible character of the demand as expressed by variations in annual corn consumption. In tracing the geography of corn production in relation to prices, consumption, and commerce, notable regional differences are encountered. The bulk of the crop is consumed where it is produced—in the corn belt—for live-stock production; in the western half of the country hardly 2 per cent of the nation's crop is produced; and here, as in the

most southern States, its high price and comparative scarcity limit its use for live-stock production. Throughout the country large local consuming centers of an industrial character have sprung up; in the New England States many million bushels are consumed in glucose and starch manufacture; a strong local demand for corn existed in Chicago, Indianapolis, St. Louis, and Peoria for use in manufacture of corn products and in distilling and brewing.

While a strongly defined greographic trend prevails in the price levels, much local unevenness is observable, as well as irregularity in the degree of increase. This is particularly manifest in regions which are mountainous, with inadequate transportation facilities or otherwise not well situated as to markets. It is also seen in areas wherein corn traffic is in smaller volume. In the midst of sections of insufficient production localities raising a surplus appear occasionally; the level of prices there is lower than in surrounding territory.

The outstanding feature of the distributive movement of corn is the local character of its markets, for only a fifth of the crop enters the national trade channels. Farm consumption absorbs over four-fifths of the crop; hence local conditions are partly responsible for much unevenness in the trend of the price levels. In some localities costs of hauling from farms to shipping points appear to be greater in time of peace than rail and ocean freight charges to some European markets. Diverse elements enter into local prices, such as the condition of roads, accessibility of markets, availability of cheaper water transportation, and the character of the local demand.

Although urban consumption disposes of only about a sixth of the crop, a considerably larger fraction is concentrated in urban markets for local use and reshipment. The largest markets are in the corn belt; they reship two-thirds of their receipts. Unlike wheat, markets for corn in other sections of the country are of minor importance.

Freight rates constitute the most important single element in price disparities. While distance is an important factor, rates are not directly proportional thereto. Competition between trade routes and markets, and volume of traffic, tend to lower rates in the sections affected.

In aligning sectional differences in farm prices with costs of production it is necessary to take into account yields to the acre. In the main, low farm prices are offset by high costs of production, and the converse also is true. High prices and high yields in bushels to the acre result in low money returns in the industrial East, because of high costs of production; high prices and low costs of production, but also low yields to the acre, result in relatively low money returns in the South.

Specific application of the maps and tables of this publication should take cognizance of the characteristics of the data. Counties are the units of measurement, and the figures represent customary conditions as determined by a five-year average. Prices reflect dynamic conditions. However, an unusual harvest or a market condition upsetting the ordinary course of business in a given product, will also disturb the price zones.

The normal price ratios, too, are slowly changing, in accord with economic conditions, of which they constitute an index. A review of price factors from 1871 to 1915 serves to indicate the present trend. While the United States average farm price of corn has risen, the geographic differences have been approximately cut in two, coinciding with decreasing transportation and marketing costs. In relation to the general average, the prices in corn-exporting States have risen rapidly and steadily; in corn-deficiency States the ratio has dropped even more notably. In some cases, notwithstanding the general rise in price levels, specific sections show declining prices as well as price percentages.

Corn and wheat prices are rapidly drawing closer. A 60-cent disparity in 1871–1875 has dwindled to 20 cents in 1911–1915. On the other hand, price disparity between corn and oats has widened because of the more rapid rise of corn prices.

The ramifications of price factors involve the entire economic structure. The charting of concrete geographic differences has possibilities of practical use. Presentation of only a few of the general bearings of the price conditions has been attempted here, for it has been manifestly impossible in this inquiry to enter into specific local surveys. It is also evident that no one factor determines the price zones, but each more or less determinate element is affected by others.

APPENDIX.

AVERAGE FARM PRICE OF CORN, BY COUNTIES, 1910–1914.

Alabama:
65 to 69 cents—
Jackson.
Lauderdale.
Limestone.
Madison.
70 to 74 cents—
Colbert.
Dekalb.
Franklin.
Lawrence.
Marshall.
Morgan.
80 to 84 cents—
Baldwin.
Blount.
Bullock.
Butler.
Calhoun.
Cherokee.
Choctaw.
Clarke.
Clay.
Cleburne.
Conecuh.
Crenshaw.
Cullman.
Dallas.
Escambia.
Etowah.
Greene.
Hale.
Lowndes.
Marengo.
Marion.
Mobile.
Monroe.
Montgomery.
Perry.
Sumter.
Talladega.
Washington.
Wilcox.
Winston.
85 to 89 cents—
Autauga.
Barbour.
Bibb.
Chambers.
Chilton.
Coffee.
Coosa.
Covington.
Dale.
Elmore.
Fayette.
Geneva.
Henry.
Houston.
Jefferson.
Lamar.
Lee.
Macon.
Pickens.
Pike.
Randolph.
Russell.
St. Clair.
Shelby.
Tallapoosa.
Tuscaloosa.
Walker.

Arizona:
95 to 99 cents—
Cochise.
Graham.
Greenlee.
Maricopa.
Pima.
Pinal.
Santa Cruz.
$1 and over—
Apache.
Gila.
Navajo.
Yavapai.

Arkansas:
60 to 64 cents—
Benton.
Boone.
Carroll.
Madison.
Marion.
Washington.
65 to 69 cents—
Baxter.
Clay.
Craighead.
Crawford.
Franklin.
Fulton.
Greene.
Johnson.
Lawrence.
Mississippi.
Newton.
Randolph.
Searcy.
Sharp.
Stone.
70 to 74 cents—
Ashley.
Chicot.
Cleburne.
Conway.
Crittenden.
Cross.
Desha.
Drew.
Independence.
Izard.
Jackson.
Logan.
Montgomery.
Perry.
Poinsett.
Pope.
St. Francis.
Scott.
Sebastian.
Van Buren.
Yell.
75 to 79 cents—
Arkansas.
Clark.
Cleveland.
Faulkner.
Garland.
Grant.
Hempstead.
Hot Spring.
Howard.
Jefferson.
Lafayette.

Arkansas—Contd.
75 to 79 cents—
Lee.
Lincoln.
Little River.
Lonoke.
Miller.
Monroe.
Phillips.
Pike.
Polk.
Prairie.
Pulaski.
Saline.
Sevier.
White.
Woodruff.
80 to 84 cents—
Bradley.
Calhoun.
Columbia.
Dallas.
Nevada.
Ouachita.
Union.

California:
80 to 84 cents—
Kings.
Monterey.
San Diego.
San Luis Obispo.
Santa Cruz.
85 to 89 cents—
Colusa.
Fresno.
Glenn.
Lake.
Los Angeles.
Marion.
Mendocino.
Napa.
Orange.
Sacramento.
San Joaquin.
Santa Barbara.
Sonoma.
Tulare.
Ventura.

Colorado:
60 to 64 cents—
Logan.
Phillips.
Sedgwick.
Yuma.
65 to 69 cents—
Baca.
Bent.
Cheyenne.
Kiowa.
Kit Carson.
Lincoln.
Morgan.
Prowers.
Washington.
70 to 74 cents—
Adams.
Arapahoe.
Boulder.
Custer.
Denver.
Douglas.
Elbert.

Colorado—Continued.
70 to 74 cents—
El Paso.
Gilpin.
Huerfano.
Jefferson.
Larimer.
Las Animas.
Otero.
Pueblo.
Washington.
Weld.
90 to 94 cents—
Delta.
Mesa.

Connecticut:
80 to 84 cents—
Hartford.
Middlesex.
New Haven.
New London.
Tolland.
Windham.
85 to 89 cents—
Fairfield.
Litchfield.

Delaware:
60 to 64 cents—
Kent.
New Castle.
Sussex.

Florida:
80 to 84 cents—
Calhoun.
Columbia.
Franklin.
Gadsden.
Hamilton.
Jackson.
Jefferson.
Leon.
Liberty.
Madison.
Suwanee.
Wakulla.
85 to 89 cents—
Alachua.
Escambia.
Holmes.
Lafayette.
Levy.
Marion.
Putnam.
St. John.
Santa Rosa.
Taylor.
Walton.
Washington.
90 to 94 cents—
Baker.
Bradford.
Citrus.
Clay.
De Soto.
Duval.
Hernando.
Hillsboro.
Lake.
Manatee.
Nassau.
Orange.
Osceola.

Florida—Continued.
90 to 94 cents—
Pasco.
Pinellas.
Polk.
Sumter.
Volusia.
Georgia:
75 to 79 cents—
Catoosa.
Dade.
Fannin.
Gilmer.
Murray.
Rabun.
Towns.
Union.
Walker.
Whitfield.
80 to 84 cents—
Baker.
Bartow.
Brooks.
Calhoun.
Chattooga.
Cherokee.
Clay.
Colquitt.
Dawson.
Decatur.
Dougherty.
Early.
Floyd.
Forsyth.
Gordon.
Grady.
Habersham.
Lee.
Lumpkin.
Miller.
Milton.
Mitchell.
Pickens.
Polk.
Quitman.
Randolph.
Stewart.
Terrell.
Thomas.
Webster.
White.
Worth.
85 to 89 cents—
Banks.
Ben Hill.
Berrien.
Bibb.
Bleckley.
Campbell.
Carroll.
Chattahoochee.
Clayton.
Clinch.
Cobb.
Coffee.
Coweta.
Crawford.
Crisp.
Dekalb.
Dodge.
Dooly.
Douglas.
Echols.
Fayette.
Franklin.
Fulton.
Gwinnett.
Hall.
Haralson.
Harris.
Heard.
Henry.
Houston.
Irwin.
Lowndes.
Macon.
Marion.
Meriwether.
Monroe.

Georgia—Continued.
85 to 89 cents—
Muscogee.
Newton.
Paulding.
Pike.
Pulaski.
Rockdale.
Schley.
Spaulding.
Stephens.
Sumter.
Talbot.
Taylor.
Tift.
Troop.
Turner.
Twiggs.
Upson.
Wilcox.
Wilkinson.
90 to 94 cents—
Appling.
Baldwin.
Bryan.
Bulloch.
Burke.
Butts.
Camden.
Charlton.
Chatham.
Clarke.
Columbia.
Effingham.
Elbert.
Emanuel.
Glascock.
Glynn.
Greene.
Hancock.
Hart.
Jackson.
Jasper.
Jeff Davis.
Jefferson.
Jenkins.
Johnson.
Jones.
Laurens.
Liberty.
Lincoln.
McDuffie.
McIntosh.
Madison.
Montgomery.
Morgan.
Oconee.
Oglethorpe.
Pierce.
Putnam.
Richmond.
Screven.
Taliaferro.
Tattnall.
Telfair.
Toombs.
Walton.
Ware.
Warren.
Washington.
Wayne.
Wheeler.
Wilkes.
Idaho:
65 to 69 cents—
Canyon.
Latah.
Nez Perce.
Illinois:
50 to 54 cents—
Bureau.
Carroll.
Champaign.
Christian.
Clark.
Coles.
Crawford.
Cumberland.
Dekalb.

Illinois—Continued.
50 to 54 cents—
Dewitt.
Douglas.
Edgar.
Edwards.
Ford.
Gallatin.
Grundy.
Hancock.
Henderson.
Henry.
Iroquois.
Jasper.
Kankakee.
Knox.
La Salle.
Lawrence.
Lee.
Livingston.
Logan.
McDonough.
McLean.
Macon.
Marshall.
Mason.
Menard.
Mercer.
Morgan.
Moultrie.
Ogle.
Peoria.
Piatt.
Putnam.
Richland.
Rock Island.
Sangamon.
Scott.
Shelby.
Stark.
Tazewell.
Vermilion.
Wabash.
Warren.
White.
Whiteside.
Woodford.
55 to 59 cents—
Adams.
Alexander.
Bond.
Boone.
Brown.
Calhoun.
Cass.
Clay.
Effingham.
Fayette.
Fulton.
Greene.
Hamilton.
Hardin.
Jackson.
Jersey.
Jo Daviess.
Johnson.
Kane.
Kendall.
McHenry.
Macoupin.
Marion.
Massac.
Montgomery.
Pike.
Pope.
Pulaski.
Saline.
Schuyler.
Stephenson.
Union.
Wayne.
Will.
Winnebago.
60 to 64 cents—
Clinton.
Cook.
Dupage.
Franklin.
Jefferson.

Illinois—Continued.
60 to 64 cents—
Lake.
Monroe.
Perry.
Randolph.
Washington.
Williamson.
Indiana:
50 to 54 cents—
Adams.
Allen.
Bartholomew.
Benton.
Blackford.
Boone.
Brown.
Carroll.
Cass.
Clay.
Clinton.
Daviess.
Decatur.
Dekalb.
Delaware.
Elkhart.
Fayette.
Fountain.
Franklin.
Fulton.
Gibson.
Grant.
Greene.
Hamilton.
Hancock.
Hendricks.
Henry.
Howard.
Huntington.
Jasper.
Jay.
Jennings.
Johnson.
Knox.
Kosciusko.
Lagrange.
Laporte.
Madison.
Marion.
Marshall.
Miami.
Monroe.
Montgomery.
Morgan.
Newton.
Noble.
Owen.
Parke.
Porter.
Posey.
Pulaski.
Putnam.
Randolph.
Rush.
St. Joseph.
Shelby.
Starke.
Steuben.
Sullivan.
Tippecanoe.
Tipton.
Union.
Vermilion.
Vigo.
Wabash.
Warren.
Wayne.
Wells.
White.
Whitley.
55 to 59 cents—
Clarke.
Dearborn.
Dubois.
Jackson.
Jefferson.
Lake.
Lawrence.
Martin.

Indiana—Continued.
55 to 59 cents—
Ohio.
Pike.
Ripley.
Scott.
Spencer.
Switzerland.
Vanderburg.
Warrick.
60 to 64 cents—
Crawford.
Floyd.
Harrison.
Orange.
Perry.
Washington.
Iowa:
45 to 49 cents—
Audubon.
Boone.
Bremer.
Buena Vista.
Butler.
Calhoun.
Carroll.
Cerro Gordo.
Cherokee.
Chickasaw.
Clay.
Crawford.
Dallas.
Dickinson.
Emmet.
Floyd.
Franklin.
Greene.
Grundy.
Guthrie.
Hamilton.
Hancock.
Hardin.
Harrison.
Humbolt.
Ida.
Jasper.
Kossuth.
Lyon.
Marshall.
Monona.
O'Brien.
Osceola.
Palo Alto.
Plymouth.
Pocahontas.
Polk.
Sac.
Shelby.
Sioux.
Story.
Webster.
Winnebago.
Woodbury.
Worth.
Wright.
50 to 64 cents—
Adair.
Adams.
Allamakee.
Appanoose.
Benton.
Blackhawk.
Buchanan.
Cass.
Cedar.
Clarke.
Clayton.
Davis.
Decatur.
Delaware.
Des Moines.
Fayette.
Fremont.
Henry.
Howard.
Iowa.

Iowa—Continued.
50 to 64 cents—
Jefferson.
Johnson.
Keokuk.
Lee.
Linn.
Louisa.
Lucas.
Madison.
Mahaska.
Marion.
Mills.
Mitchell.
Monroe.
Montgomery.
Muscatine.
Page.
Pottawattamie.
Poweshiek.
Ringgold.
Scott.
Tama.
Taylor.
Union.
Van Buren.
Wapello.
Warren.
Washington.
Wayne.
Winneshiek.
55 to 59 cents—
Clinton.
Dubuque.
Jackson.
Jones.
Kansas:
55 to 59 cents—
Allen.
Anderson.
Atchison.
Bourbon.
Brown.
Clay.
Cloud.
Coffey.
Crawford.
Dickinson.
Doniphan.
Douglas.
Franklin.
Geary.
Jackson.
Jefferson.
Jewell.
Johnson.
Leavenworth.
Linn.
Lyon.
Marshall.
Miami.
Morris.
Nemaha.
Neosho.
Osage.
Phillips.
Pottawatomie.
Republic.
Riley.
Shawnee.
Smith.
Wabaunsee.
Washington.
Wilson.
Woodson.
Wyandotte.
60 to 64 cents—
Barber.
Barton.
Butler.
Chase.
Chautauqua.
Cherokee.
Cheyenne.
Clark.
Comanche.

Kansas—Continued.
60 to 64 cents—
Cowley.
Decatur.
Edwards.
Elk.
Ellsworth.
Ford.
Graham.
Gray.
Greenwood.
Harper.
Harvey.
Hodgeman.
Kingman.
Kiowa.
Labette.
Lincoln.
McPherson.
Marion.
Meade.
Mitchell.
Montgomery.
Norton.
Osborne.
Ottawa.
Pawnee.
Pratt.
Rawlins.
Reno.
Rice.
Rooks.
Russell.
Saline.
Sedgwick.
Seward.
Sheridan.
Sherman.
Stafford.
Stevens.
Sumner.
Thomas.
65 to 69 cents—
Ellis.
Finney.
Gove.
Grant.
Greeley.
Hamilton.
Haskell.
Kearny.
Lane.
Logan.
Morton.
Ness.
Rush.
Scott.
Trego.
Wallace.
Wichita.
Kentucky:
55 to 59 cents—
Ballard.
Caldwell.
Carlisle.
Crittenden.
Daviess.
Fulton.
Graves.
Hancock.
Henderson.
Hickman.
Hopkins.
Livingston.
Lyon.
McCracken.
McLean.
Union.
Webster.
60 to 64 cents—
Adair.
Allen.
Barren.
Boone.
Bourbon.
Boyle.

Kentucky—Contd.
60 to 64 cents—
Breckinridge.
Bullitt.
Butler.
Calloway.
Carroll.
Casey.
Christian.
Clark.
Clinton.
Cumberland.
Edmonson.
Estill.
Fayette.
Gallatin.
Garrard.
Grayson.
Green.
Greenup.
Hardin.
Hart.
Jessamine.
Larue.
Lewis.
Lincoln.
Logan.
Madison.
Marion.
Marshall.
Meade.
Mercer.
Metcalf.
Monroe.
Muhlenberg.
Nelson.
Ohio.
Rock Castle.
Russell.
Scott.
Simpson.
Spencer.
Taylor.
Todd.
Trigg.
Trimble.
Warren.
Washington.
Woodford.
65 to 69 cents—
Anderson.
Bath.
Boyd.
Bracken.
Campbell.
Carter.
Elliott.
Fleming.
Franklin.
Grant.
Harrison.
Henry.
Jefferson.
Johnson.
Kenton.
Lawrence.
Mason.
Menifee.
Montgomery.
Nicholas.
Oldham.
Owen.
Pendleton.
Powell.
Robertson.
Rowan.
Shelby.
70 to 74 cents—
Bell.
Breathitt.
Clay.
Floyd.
Jackson.
Knox.
Laurel.
Lee.

Kentucky—Contd.
70 to 74 cents—
McCreary.
Magoffin.
Martin.
Morgan.
Owsley.
Pulaski.
Wayne.
Whitley.
Wolfe.
75 to 79 cents—
Harlan.
Knott.
Leslie.
Letcher.
Perry.
Pike.
Louisiana:
65 to 69 cents—
Ascension.
Assumption.
Avoyelles.
Iberia.
Iberville.
Lafayette.
Pointe Coupee.
St. Landry.
St. Martin.
St. Mary.
West Baton Rouge.
West Feliciana.
70 to 74 cents—
Catahoula.
Concordia.
East Baton Rouge.
East Carroll.
East Feliciana.
Franklin.
Grant.
Jefferson.
Lafourche.
La Salle.
Livingston.
Madison.
Morehouse.
Orleans.
Plaquemines.
Richland.
St. Bernard.
St. Charles.
St. Helena.
St. James.
St. John.
Tensas.
Terrebonne.
West Carroll.
75 to 79 cents—
Acadia.
Bossier.
Caddo.
Caldwell.
De Soto.
Evangeline.
Natchitoches.
Ouachita.
Rapides.
Red River.
St. Tammany.
Tangipahoa.
Vermilion.
Washington.
Winn.
80 to 84 cents—
Allen.
Beauregard.
Bienville.
Calcasieu.
Cameron.
Claiborne.
Jackson.
Jefferson Davis.
Lincoln.
Sabine.
Union.
Vernon.
Webster.

Maryland:
60 to 64 cents—
Baltimore.
Caroline.
Carroll.
Cecil.
Dorchester.
Frederick.
Harford.
Howard.
Kent.
Montgomery.
Queen Annes.
Somerset.
Talbot.
Washington.
Wicomico.
Worcester.
65 to 69 cents—
Anne Arundel.
Calvert.
Charles.
Prince George.
St. Marys.
75 to 79 cents—
Allegany.
Garrett.
Massachusetts:
80 to 84 cents—
Berkshire.
Essex.
Franklin.
Hampden.
Hampshire.
Middlesex.
Norfolk.
Suffolk.
Worcester.
85 to 89 cents—
Barnstable.
Bristol.
Dukes.
Nantucket.
Plymouth.
Michigan:
55 to 59 cents—
Berrien.
Branch.
Cass.
Hillsdale.
Kalamazoo.
Lenawee.
Monroe.
St. Joseph.
Van Buren.
60 to 64 cents—
Allegan.
Barry.
Benzie.
Calhoun.
Clare.
Clinton.
Eaton.
Gratiot.
Ingham.
Ionia.
Isabella.
Jackson.
Kent.
Lake.
Livingston.
Manistee.
Mason.
Mecosta.
Missaukee.
Montcalm.
Osceola.
Shiwassee.
Washtenaw.
Wayne.
Wexford.
65 to 69 cents—
Alcona.
Alpena.
Antrim.
Arenac.
Bay.

Michigan—Contd.
65 to 69 cents—
Crawford.
Genesee.
Gladwin.
Grand Traverse.
Huron.
Iosco.
Kalkaska.
Lapeer.
Leelanau.
Macomb.
Midland.
Muskegon.
Newaygo.
Oakland.
Oceana.
Ogemaw.
Otsego.
Ottawa.
Roscommon.
Saginaw.
St. Clair.
Sanilac.
Tuscola.
70 to 74 cents—
Charlevoix.
Cheboygan.
Emmet.
Minnesota:
45 to 49 cents—
Bigstone.
Blue Earth.
Brown.
Chippewa.
Cottonwood.
Faribault.
Freeborn.
Jackson.
Kandiyohi.
Lac qui Parle.
Le Sueur.
Lincoln.
Lyon.
McLeod.
Martin.
Murray.
Nicollet.
Nobles.
Pipestone.
Redwood.
Renville.
Rice.
Rock.
Sibley.
Steele.
Swift.
Waseca.
Watonwan.
Yelloy Medicine.
50 to 54 cents—
Anoka.
Benton.
Carver.
Dakota.
Dodge.
Douglas.
Fillmore.
Goodhue.
Grant.
Houston.
Isanti.
Meeker.
Mower.
Olmsted.
Ottertail.
Pope.
Scott.
Sherbourne.
Stearns.
Stevens.
Traverse.
Wabasha.
Wilkin.
Winona.
Wright.

Minnesota—Contd.
55 to 59 cents—
Becker.
Chisago.
Clay.
Hennepin.
Hubbard.
Kanabec.
Mille Lacs.
Morrison.
Norman.
Pine.
Ramsey.
Todd.
Wadena.
Washington.
60 to 64 cents—
Aitkin.
Beltrami.
Cass.
Clearwater.
Crow Wing.
Kittson.
Mahnomen.
Marshall.
Pennington.
Polk.
Red Lake.
Roseau.
Mississippi:
65 to 69 cents—
Adams.
Amite.
Claiborne.
Franklin.
Issaquena.
Jefferson.
Sharkey.
Warren.
Wilkinson.
70 to 74 cents—
Alcorn.
Benton.
Bolivar.
Copiah.
De Soto.
Hinds.
Holmes.
Lincoln.
Madison.
Marshall.
Pike.
Prentiss.
Sunflower.
Tippah.
Tishomingo.
Union.
Washington.
Yazoo.
75 to 79 cents—
Attala.
Calhoun.
Carroll.
Chickasaw.
Choctaw.
Clay.
Coahoma.
Grenada.
Itawamba.
Jefferson Davis.
Lafayette.
Lawrence.
Leake.
Lee.
Leflore.
Marion.
Montgomery.
Oktibbeha.
Panola.
Pontotoc.
Quitman.
Rankin.
Scott.
Simpson.
Tallahatchie.
Tate.
Tunica.

Mississippi—Contd.
75 to 79 cents—
Webster.
Winston.
Yalobusha.
80 to 84 cents—
Clarke.
Covington.
Forrest.
George.
Greene.
Hancock.
Harrison.
Jackson.
Jasper.
Jones.
Kemper.
Lamar.
Lauderdale.
Lowndes.
Monroe.
Neshoba.
Newton.
Pearl River.
Perry.
Smith.
Wayne.
Missouri:
50 to 54 cents—
Atchison.
55 to 59 cents—
Adair.
Andrew.
Audrain.
Barton.
Bates.
Buchanan.
Caldwell.
Cape Girardeau.
Carroll.
Cass.
Chariton.
Clark.
Clay.
Clinton.
Daviess.
Dekalb.
Dunklin.
Gentry.
Grundy.
Harrison.
Holt.
Howard.
Jackson.
Knox.
Lewis.
Linn.
Livingston.
Macon.
Marion.
Mercer.
Mississippi.
Monroe.
New Madrid.
Nodaway.
Pemiscot.
Pike.
Platte.
Putnam.
Ralls.
Randolph.
Ray.
Schuyler.
Scotland.
Scott.
Shelby.
Sullivan.
Vernon.
Worth.
60 to 64 cents—
Barry.
Benton.
Bollinger.
Boone.
Butler.
Callaway.
Cedar.
Christian.
Cooper.

Missouri—Continued.
60 to 64 cents—
Dade.
Greene.
Henry.
Jasper.
Jefferson.
Johnson.
Lafayette.
Lawrence.
Lincoln.
McDonald.
Madison.
Moniteau.
Montgomery.
Morgan.
Newton.
Perry.
Pettis.
Polk.
St. Charles.
St. Clair.
St. Francois.
Saline.
Stoddard.
Stone.
Warren.
65 to 69 cents—
Camden.
Carter.
Cole.
Crawford.
Dallas.
Dent.
Douglas.
Franklin.
Gasconade.
Hickory.
Iron.
Laclede.
Maries.
Miller.
Oregon.
Osage.
Ozark.
Ripley.
St. Louis.
Taney.
Washington.
Wayne.
Webster.
Wright.
70 to 74 cents—
Howell.
Phelps.
Pulaski.
Reynolds.
Shannon.
Texas.
Nebraska:
45 to 49 cents—
Antelope.
Blaine.
Boone.
Boyd.
Brown.
Burt.
Cedar.
Colfax.
Cuming.
Dakota.
Dixon.
Dodge.
Garfield.
Holt.
Keyapaha.
Knox.
Loup.
Madison.
Nance.
Pierce.
Platte.
Rock.
Stanton.
Thurston.
Washington.
Wayne.
Wheeler.

Nebraska—Contd.
50 to 54 cents—
Adams.
Buffalo.
Butler.
Cass.
Cherry.
Clay.
Custer.
Dawson.
Douglas.
Fillmore.
Franklin.
Frontier.
Gage.
Garden.
Gosper.
Grant.
Greeley.
Hall.
Hamilton.
Hayes.
Hooker.
Howard.
Jefferson.
Johnson.
Kearney.
Lancaster.
Lincoln.
Logan.
McPherson.
Merrick.
Nemaha.
Nuckolls.
Otoe.
Pawnee.
Phelps.
Polk.
Richardson.
Saline.
Sarpy.
Saunders.
Seward.
Sherman.
Thayer.
Thomas.
Valley.
Webster.
York.
55 to 59 cents—
Boxbutte.
Chase.
Cheyenne.
Dawes.
Deuel.
Dundy.
Furnas.
Harlan.
Hitchcock.
Perkins.
Redwillow.
Sheridan.
60 to 64 cents—
Banner.
Kimball.
Scottsbluff.
Sioux.
New Hampshire:
75 to 79 cents—
Hillsboro.
Rockingham.
80 to 84 cents—
Belknap.
Carroll.
Cheshire.
Coos.
Grafton.
Merrimack.
Strafford.
Sullivan.
New Jersey:
70 to 74 cents—
Burlington.
Camden.
Gloucester.
Hunterdon.
Mercer.
Middlesex.

New Jersey—Contd.
70 to 74 cents—
Monmouth.
Morris.
Salem.
Somerset.
Union.
Warren.
75 to 79 cents—
Atlantic.
Bergen.
Cape May.
Cumberland.
Essex.
Hudson.
Ocean.
Passaic.
Sussex.
New Mexico:
75 to 79 cents—
Curry.
Quay.
Roosevelt.
Union.
85 to 89 cents—
Chaves.
Colfax.
Eddy.
Guadalupe.
Lincoln.
Mora.
Otero.
San Miguel.
Taos.
Torrence.
95 to 99 cents—
Bernalillo.
Dona Ana.
Grant.
Luna.
McKinley.
Rio Arriba.
Sandoval.
San Juan.
Santa Fe.
Sierra.
Socorro.
Valencia.
New York:
70 to 74 cents—
Allegany.
Broome.
Cattaraugus.
Chautauqua.
Chemung.
Cortland.
Erie.
Genesee.
Livingston.
Niagara.
Orleans.
Schuyler.
Steuben.
Tioga.
Tompkins.
Wyoming.
75 to 79 cents—
Cayuga.
Chenango.
Delaware.
Franklin.
Jefferson.
Lewis.
Madison.
Monroe.
Oneida.
Onondaga.
Ontario.
Orange.
Oswego.
Rockland.
St. Lawrence.
Seneca.
Sullivan.
Wayne.
Westchester.
Yates.

New York—Contd.
80 to 84 cents—
Albany.
Clinton.
Columbia.
Dutchess.
Essex.
Fulton.
Greene.
Hamilton.
Herkimer.
Kings.
Montgomery.
Nassau.
Otsego.
Putnam.
Queens.
Rensselaer.
Richmond.
Saratoga.
Schenectady.
Schoharie.
Suffolk.
Ulster.
Warren.
Washington.
North Carolina:
75 to 79 cents—
Alexander.
Buncombe.
Burke.
Caldwell.
Davie.
Haywood.
Iredell.
McDowell.
Madison.
Yadkin.
80 to 84 cents—
Cherokee.
Clay.
Graham.
Henderson.
Jackson.
Macon.
Polk.
Rutherford.
Swain.
Transylvania.
85 to 89 cents—
Alamance.
Alleghany.
Ashe.
Avery.
Beaufort.
Bertie.
Cabarrus.
Camden.
Caswell.
Catawba.
Chatham.
Chowan.
Cleveland.
Craven.
Currituck.
Dare.
Davidson.
Durham.
Edgecombe.
Forsyth.
Gaston.
Gates.
Granville.
Greene.
Guilford.
Halifax.
Hertford.
Hyde.
Lenoir.
Lincoln.
Martin.
Mecklenburg.
Mitchell.
Northampton.
Orange.
Pamlico.
Pasquotank.
Perquimans.
Person.

North Carolina—Con.
85 to 89 cents—
Pitt.
Randolph.
Rockingham.
Rowan.
Stokes.
Surry.
Tyrrell.
Vance.
Warren.
Washington.
Watauga.
Wayne.
Wilkes.
Yancy.
90 to 94 cents—
Anson.
Carteret.
Cumberland.
Duplin.
Franklin.
Harnett.
Hoke.
Johnston.
Jones.
Lee.
Montgomery.
Moore.
Nash.
Onslow.
Sampson.
Stanly.
Union.
Wake.
Wilson.
95 to 99 cents—
Bladen.
Brunswick.
Columbus.
New Hanover.
Pender.
Richmond.
Robeson.
Scotland.
North Dakota:
50 to 54 cents—
Cass.
Ransom.
Richmond.
Sargent.
55 to 59 cents—
Barnes.
Burleigh.
Cavalier.
Dickey.
Emmons.
Grand Forks.
Kidder.
Lamoure.
Logan.
McIntosh.
Nelson.
Pembina.
Ramsey.
Steele.
Stutsman.
Towner.
Traill.
Walsh.
60 to 64 cents—
Adams.
Dunn.
Hettinger.
McLean.
Mercer.
Morton.
Oliver.
Stark.
Ohio:
50 to 54 cents—
Allen.
Auglaize.
Champaign.
Clark.
Darke.
Defiance.
Delaware.
Fayette.

Ohio—Continued.
50 to 54 cents—
Franklin.
Fulton.
Greene.
Hancock.
Hardin.
Henry.
Logan.
Madison.
Marion.
Mercer.
Miami.
Paulding.
Preble.
Putnam.
Shelby.
Union.
Van Wert.
Williams.
Wood.
Wyandot.
55 to 59 cents—
Ashland.
Butler.
Clinton.
Crawford.
Fairfield.
Highland.
Huron.
Knox.
Licking.
Lucas.
Montgomery.
Morrow.
Ottawa.
Pickaway.
Pike.
Richland.
Ross.
Sandusky.
Senaca.
Warren.
60 to 64 cents—
Adams.
Brown.
Clermont.
Coshocton.
Erie.
Gallia.
Hamilton.
Hocking.
Holmes.
Jackson.
Lawrence.
Lorain.
Medina.
Muskingum.
Perry.
Scioto.
Vinton.
Wayne.
65 to 69 cents—
Ashtabula.
Athens.
Belmont.
Carroll.
Columbiana.
Cuyahoga.
Geauga.
Guernsey.
Harrison.
Jefferson.
Lake.
Mahoning.
Meigs.
Monroe.
Morgan.
Noble.
Portage.
Stark.
Summit.
Trumbull.
Tuscarawas.
Washington.
Oklahoma:
55 to 59 cents—
Beckham.
Blaine.

Oklahoma—Contd.
55 to 59 cents—
Caddo.
Custer.
Dewey.
Ellis.
Roger Mills.
Washita.
60 to 64 cents—
Adair.
Alfalfa.
Beaver.
Canadian.
Cherokee.
Cimarron.
Cleveland.
Comanche.
Cotton.
Craig.
Delaware.
Garfield.
Garvin.
Grady.
Grant.
Greer.
Harmon.
Harper.
Jackson.
Kay.
Kingfisher.
Kiowa.
Logan.
McClain.
Major.
Mayes.
Noble.
Nowata.
Oklahoma.
Osage.
Ottawa.
Pawnee.
Rogers.
Stephens.
Texas.
Tillman.
Tulsa.
Wagoner.
Washington.
Woods.
Woodward.
65 to 69 cents—
Carter.
Creek.
Haskell.
Hughes.
Jefferson.
Lincoln.
McIntosh.
Murray.
Muskogee.
Okfuskee.
Okmulgee.
Payne.
Pontotoc.
Pottawatomie.
Seminole.
Sequoyah.
70 to 74 cents—
Atoka.
Bryan.
Choctaw.
Coal.
Johnston.
Latimer.
LeFlore.
Love.
Marshall.
Pittsburg.
75 to 79 cents—
McCurtain.
Pushmataha.
Oregon:
70 to 74 cents—
Clackamas.
Marion.
75 to 79 cents—
Douglas.
Jackson.

Oregon—Continued.
75 to 79 cents—
Lane.
Linn.
Pennsylvania:
65 to 69 cents—
Adams.
Berks.
Center.
Chester.
Clinton.
Columbia.
Crawford.
Cumberland.
Dauphin.
Erie.
Franklin.
Juniata.
Lancaster.
Lawrence.
Lebanon.
Lycoming.
Mercer.
Mifflin.
Montour.
Northumberland.
Perry.
Snyder.
Union.
Warren.
York.
70 to 74 cents—
Armstrong.
Beaver.
Bedford.
Blair.
Bradford.
Bucks.
Butler.
Clarion.
Delaware.
Elk.
Fulton.
Huntingdon.
Indiana.
Jefferson.
Lehigh.
McKean.
Montgomery.
Northampton.
Philadelphia.
Potter.
Somerset.
Susquehanna.
Tioga.
Venango.
Westmoreland.
75 to 79 cents—
Allegheny.
Cambria.
Cameron.
Carbon.
Clearfield.
Fayette.
Greene.
Lackawanna.
Luzerne.
Monroe.
Pike.
Schuylkill.
Sullivan.
Washington.
Wayne.
Wyoming.
Rhode Island:
85 to 89 cents—
Briston.
Kent.
Newport.
Providence.
$1 and over—
Washington.
South Carolina:
85 to 89 cents—
Calhoun.
Charleston.
Colleton.
Dorchester.
Greenville.

South Dakota—Con.
85 to 89 cents—
Lexington.
Oconee.
Orangeburg.
Pickens.
Richland.
Spartanburg.
90 to 94 cents—
Abbeville.
Aiken.
Anderson.
Bamberg.
Barnwell.
Beaufort.
Berkeley.
Cherokee.
Chester.
Clarendon.
Edgefield.
Fairfield.
Greenwood.
Hampton.
Jasper.
Kershaw.
Lancaster.
Laurens.
Lee.
Newberry.
Saluda.
Sumter.
Union.
York.
95 to 99 cents—
Chesterfield.
Darlington.
Dillon.
Florence.
Georgetown.
Horry.
Marion.
Marlboro.
Williamsburg.
South Dakota:
45 to 49 cents—
Aurora.
Beadle.
Bon Homme.
Brookings.
Brule.
Charles Mix.
Clay.
Davison.
Deuel.
Douglas.
Grant.
Gregory.
Hanson.
Hutchinson.
Jerauld.
Kingsbury.
Lake.
Lincoln.
McCook.
Miner.
Minnehaha.
Moody.
Sanborn.
Tripp.
Turner.
Union.
Yankton.
50 to 54 cents—
Brown.
Buffalo.
Clark.
Codington.
Day.
Hamlin.
Hand.
Hyde.
Lyman.
Marshall.
Roberts.
Spink.
55 to 59 cents—
Campbell.
Edmunds.
Faulk.

South Dakota—Contd.
55 to 59 cents—
Hughes.
McPherson.
Potter.
Sully.
Walworth.
65 to 69 cents—
Butte.
Custer.
Fall River.
Harding.
Lawrence.
Meade.
Pennington.
Perkins.
Tennessee:
55 to 59 cents—
Dyer.
Lake.
Obion.
60 to 64 cents—
Bedford.
Cannon.
Coffee.
Crockett.
Decatur.
Dekalb.
Franklin.
Gibson.
Giles.
Hardin.
Henry.
Hickman.
Humphreys.
Lauderdale.
Lincoln.
Marshall.
Maury.
Montgomery.
Moore.
Perry.
Rutherford.
Stewart.
Warren.
Weakley.
Williamson.
65 to 69 cents—
Benton.
Bledsoe.
Carroll.
Cheatham.
Chester.
Clay.
Davidson.
Dickson.
Greene.
Grundy.
Hamblen.
Hancock.
Hawkins.
Haywood.
Henderson.
Houston.
Jackson.
Jefferson.
Lawrence.
Lewis.
McNairy.
Macon.
Madison.
Marion.
Overton.
Pickett.
Putnam.
Robertson.
Sequatchie.
Smith.
Sumner.
Tipton.
Trousdale.
Van Buren.
Wayne.
White.
Wilson.
70 to 74 cents—
Anderson.
Blount.
Bradley.

Tennessee—Contd.
70 to 74 cents—
Campbell.
Claiborne.
Cocke.
Cumberland.
Fayette.
Fentress.
Grainger.
Hamilton.
Hardeman.
James.
Knox.
Loudon.
McMinn.
Meigs.
Monroe.
Morgan.
Polk.
Rhea.
Roane.
Scott.
Sevier.
Shelby.
Sullivan.
Union.
Washington.
75 to 79 cents—
Carter.
Johnson.
Unicoi.
Texas:
55 to 59 cents—
Gray.
Hemphill.
Lipscomb.
Roberts.
Wheeler.
60 to 64 cents—
Armstrong.
Briscoe.
Childress.
Collingsworth.
Donley.
Hale.
Hall.
Swisher.
65 to 69 cents—
Cottle.
Crosby.
Floyd.
Foard.
Hardeman.
Motley.
Wichita.
Wilbarger.
70 to 74 cents—
Archer.
Atascosa.
Bandera.
Bastrop.
Baylor.
Bell.
Bexar.
Blanco.
Burnet.
Caldwell.
Clay.
Collin.
Colorado.
Comal.
Cooke.
Coryell.
Delta.
Denton.
De Witt.
Dickens.
Falls.
Fannin.
Fayette.
Gillespie.
Gonzales.
Grayson.
Guadalupe.
Hamilton.
Hays.
Hopkins.
Hunt.
Karnes.

Texas—Continued.
70 to 74 cents—
Kendall.
Kerr.
King.
Knox.
Lamar.
Lampasas.
Lavaca.
Medina.
Milam.
Montague.
Travis.
Williamson.
Wilson.
75 to 79 cents—
Aransas.
Austin.
Bee.
Bosque.
Bowie.
Brazoria.
Brazos.
Brown.
Burleson.
Calhoun.
Callahan.
Camp.
Cass.
Chambers.
Comanche.
Dallas.
Eastland.
Ellis.
Erath.
Fort Bend.
Franklin.
Freestone.
Galveston.
Goliad.
Gregg.
Grimes.
Harris.
Harrison.
Haskell.
Hill.
Hood.
Jack.
Jackson.
Jim Wells.
Johnson.
Kaufman.
Kimble.
Kleberg.
Lee.
Leon.
Liberty.
Limestone.
Live Oak.
Llano.
McLennan.
Madison.
Marion.
Mason.
Matagorda.
Mills.
Montgomery.
Morris.
Navarro.
Nueces.
Palo Pinto.
Panola.
Parker.
Rains.
Red River.
Refugio.
Robertson.
Rockwall.
Rusk.
San Patricio.
San Saba.
Shackelford.
Somervell.
Stephens.
Stonewall.
Tarrant.
Throckmorton.
Titus.
Upshur

Texas—Continued.
75 to 79 cents—
Van Zandt.
Victoria.
Waller.
Washington.
Wharton.
Wise.
Wood.
Young.
80 to 84 cents—
Anderson.
Angelina.
Borden.
Cherokee.
Coke.
Coleman.
Concho.
Fisher.
Hardin.
Henderson.
Houston.
Howard.
Jasper.
Jefferson.
Jones.
McCulloch.
Menard.
Mitchell.
Nacogdoches.
Newton.
Nolan.
Orange.
Polk.
Runnels.
Sabine.
San Augustine.
San Jacinto.
Scurry.
Shelby.
Smith.
Taylor.
Tom Green.
Trinity.
Tyler.
Walker.
Vermont:
75 to 79 cents—
Addison.
Caledonia.
Chittenden.
Essex.
Franklin.
Grand Isle.
Lamoille.
Orange.
Orleans.
Windsor.
80 to 84 cents—
Bennington.
Rutland.
Washington.
Windham.
Virginia:
60 to 64 cents—
Accomac.
Northampton.
65 to 69 cents—
Clarke.
Fauquier.
Frederick.
Loudoun.
70 to 74 cents—
Albemarle.
Alexandria.
Augusta.
Bedford.
Botetourt.
Caroline.
Culpeper.
Essex.
Fairfax.
Gloucester.
Greene.
King and Queen.
King George.
King William.
Lancaster.
Lee.

Virginia—Continued.
70 to 74 cents—
Madison.
Mathews.
Middlesex.
Northumberland.
Orange.
Page.
Prince William.
Rappahannock.
Richmond.
Rockbridge.
Rockingham.
Scott.
Shenandoah.
Spotsylvania.
Stafford.
Warren.
Westmoreland.
75 to 79 cents—
Amelia.
Amherst.
Appomattox.
Buckingham.
Campbell.
Charles City.
Chesterfield.
Cumberland.
Elizabeth City.
Fluvanna.
Goochland.
Hanover.
Henrico.
James City.
Louisa.
Nansemond.
Nelson.
New Kent.
Norfolk.
Powhatan.
Prince Edward.
Princess Anne.
Warwick.
York.
80 to 84 cents—
Alleghany.
Bath.
Brunswick.
Charlotte.
Craig.
Dinwiddie.
Floyd.
Franklin.
Giles.
Greenesville.
Halifax.
Henry.
Highland.
Isle of Wight.
Lunenburg.
Mecklenburg.
Montgomery.
Nottoway.
Pittsylvania.
Prince George.
Pulaski.
Roanoke.
Smyth.
Southampton.
Surry.
Sussex.
Washington.
Wythe.
85 to 89 cents—
Bland.
Buchanan.
Carroll.
Dickenson.
Grayson.
Patrick.
Russell.
Tazewell.
Wise.
Washington:
70 to 74 cents—
Asotin.
Columbia.
Ferry.
Garfield.
Lincoln.

Washington—Contd.
70 to 74 cents—
Stevens.
Walla Walla.
Whitman.
75 to 79 cents—
Adams.
Chelan.
Douglas.
Grant.
Okanogan.
Spokane.
Yakima.
West Virginia:
65 to 69 cents—
Berkeley.
Cabell.
Jefferson.
Mason.
Wayne.
70 to 74 cents—
Brooke.
Hancock.
Jackson.
Marshall.
Ohio.
Pleasants.
Tyler.
Wetzel.
Wood.
75 to 79 cents—
Calhoun.
Grant.
Hampshire.
Hardy.
Kanawha.
Lincoln.
Logan.
Mineral.
Mingo.
Morgan.
Putnam.
Ritchie.
Roane.
Wirt.
80 to 84 cents—
Barbour.
Boone.
Braxton.
Clay.
Doddridge.
Fayette.
Gilmer.
Greenbrier.
Harrison.
Lewis.
McDowell.
Marion.
Mercer.
Monongalia.
Monroe.
Nicholas.
Pendleton.
Pocahontas.
Preston.
Raleigh.
Randolph.
Summers.
Taylor.
Tucker.
Upshur.
Webster.
Wyoming.
Wisconsin:
50 to 54 cents—
Buffalo.
Eau Claire.
Pepin.
Pierce.
Trempealeau.
55 to 59 cents—
Adams.
Burnett.
Chippewa.
Columbia.
Crawford.
Dane.
Dunn.
Grant.
Green.

Wisconsin—Contd.
55 to 59 cents—
Green Lake.
Iowa.
Jackson.
Juneau.
La Crosse.
Lafayette.
Marquette.
Monroe.
Polk.
Richland.
Rock.
Rusk.
St. Croix.

Wisconsin—Contd.
55 to 59 cents—
Sauk.
Vernon.
Walworth.
60 to 64 cents—
Barron.
Clark.
Dodge.
Fond du Lac.
Jefferson.
Kenosha.
Milwaukee.
Outagamie.
Ozaukee.

Wisconsin—Contd.
60 to 64 Cents—
Portage.
Racine.
Shawano.
Sheboygan.
Washburn.
Washington.
Waukesha.
Waupaca.
Waushara.
Winnebago.
Wood.
65 to 69 cents—
Brown.

Wisconsin—Contd.
65 to 69 cents—
Calumet.
Door.
Kewaunee.
Manitowoc.
Marinette.
Oconto.
70 to 74 cents—
Langdale.
Marathon.
Wyoming:
70 to 74 cents—
Crook.
Laramie.

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